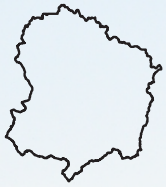
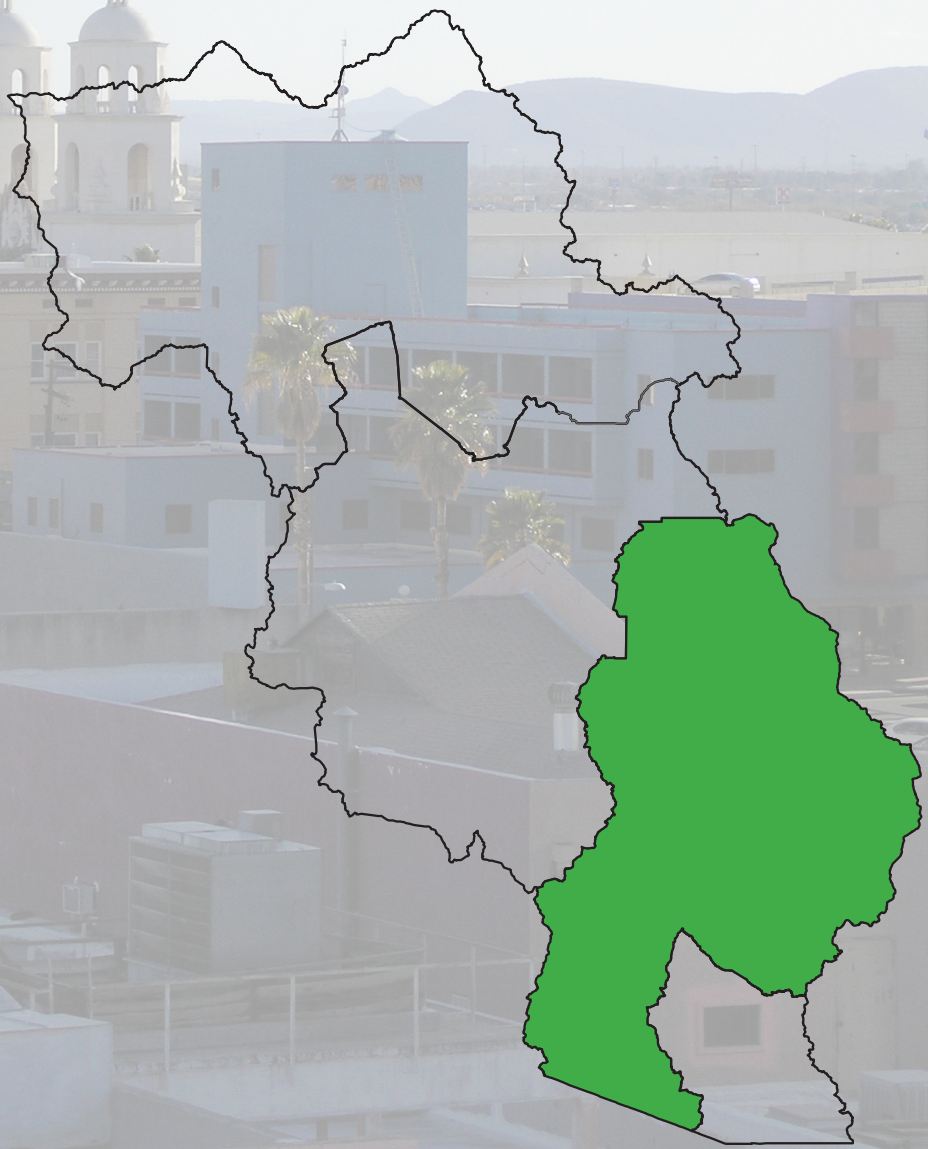
Section 8.5
Tucson AMA





8.5.1 Geography of the Tucson AMA

The Tucson AMA is 3,869 square miles in area. Geographic features and principal communities are shown on Figure 8.5-1. The AMA is characterized by mid to high elevation mountains and broad alluvial basins. Vegetation types include Lower Colorado River and upland Sonoran desertscrub, southwestern grassland, southwestern interior chaparral, madrean evergreen woodland and small areas of petran montane conifer forest. Riparian vegetation is found along some watercourses, notably Sabino and Romero Creeks and at Arivaca Cienega (See Figure 8.0-10)

- Principal geographic features shown on Figure 8.5-1 are:
    - The Santa Cruz River running south to north in the center.
    - Pantano Wash, Rillito Creek and Sabino Creek in the central eastern portion of the AMA and Altar and Brawley Wash in the west.
    - The Picacho Mountains and Black Mountain on the northern AMA boundary, the Santa Catalina, Rincon, and Santa Rita Mountains on the eastern boundary, the Sierrita and Santa Rita Mountains along the southern boundary, and the Baboquivari, Roskruge, Waterman and Silver Bell Mountains on the western boundary.
    - Altar Valley and Avra Valley in the western portion of the AMA and, though not specifically indicated, the Santa Cruz River Valley along the Santa Cruz River drainage in the center of the AMA.
    - The lowest point in the AMA at 1,770 feet, just north of Picacho Peak where Interstate 10 exits the AMA.
    - The highest point in the AMA at 9,453 feet at Mt. Wrightson in the Santa Rita Mountains.

Figure 8.5-1
Tucson AMA
Geographic Features

8.5.2 Land Ownership in the Tucson AMA

Land ownership, including the percentage of ownership by category, for the Tucson AMA is shown in Figure 8.5-2. The principal feature of land ownership in the AMA is the relatively large proportion of State Trust lands. A description of land ownership data sources and methods is found in Volume 1, Section 1.3.8. Land ownership categories are discussed below in the order of largest to smallest percentage in the AMA.

State Trust Land

- 37.8% of the land is held in trust for public schools and other beneficiaries under the State Trust Land system.
- Primary land use is grazing.

Private

- 31.2% of the land is private.
- Land uses include domestic, commercial and agriculture.

National Forest

- 11.6% of the land is federally owned and managed as the Coronado National Forest.
- The AMA contains the 7,550-acre Pajarita Wilderness, the 56,770-acre Pusch Ridge Wilderness, the 11,130-acre Rincon Mountain Wilderness and 10,320 acres of the 15,860-acre Mt Wrightson Wilderness (See Figure 8.0-13).
- Land uses include recreation, resource conservation and grazing.

U.S. Bureau of Land Management (BLM)

- 6.2% of the land is federally owned and managed by the Tucson Field Office of the Bureau of Land Management.
- This AMA includes the 2,740-acre Baboquivari Peak Wilderness and 4,480 acres of the 5,080-acre Coyote Mountain Wilderness. The AMA also includes a portion of the Ironwood National Monument (See Figure 8.0-13)
- Land uses include resource conservation, recreation and grazing.

Wildlife Refuge

- 4.6% of the land is federally owned and managed by U.S. Fish and Wildlife as the Buenos Aires National Wildlife Refuge.
- Land uses include resource conservation and recreation.

Indian Reservation

- 4.4% of the land is under tribal ownership as the Tohono O'odham and Pascua Yaqui Indian Reservations.
- Land uses include domestic, commercial and agriculture.

National Parks and Monuments

- 3.0% of the land is federally owned and managed by the National Park Service (NPS) as Saguaro National Park.

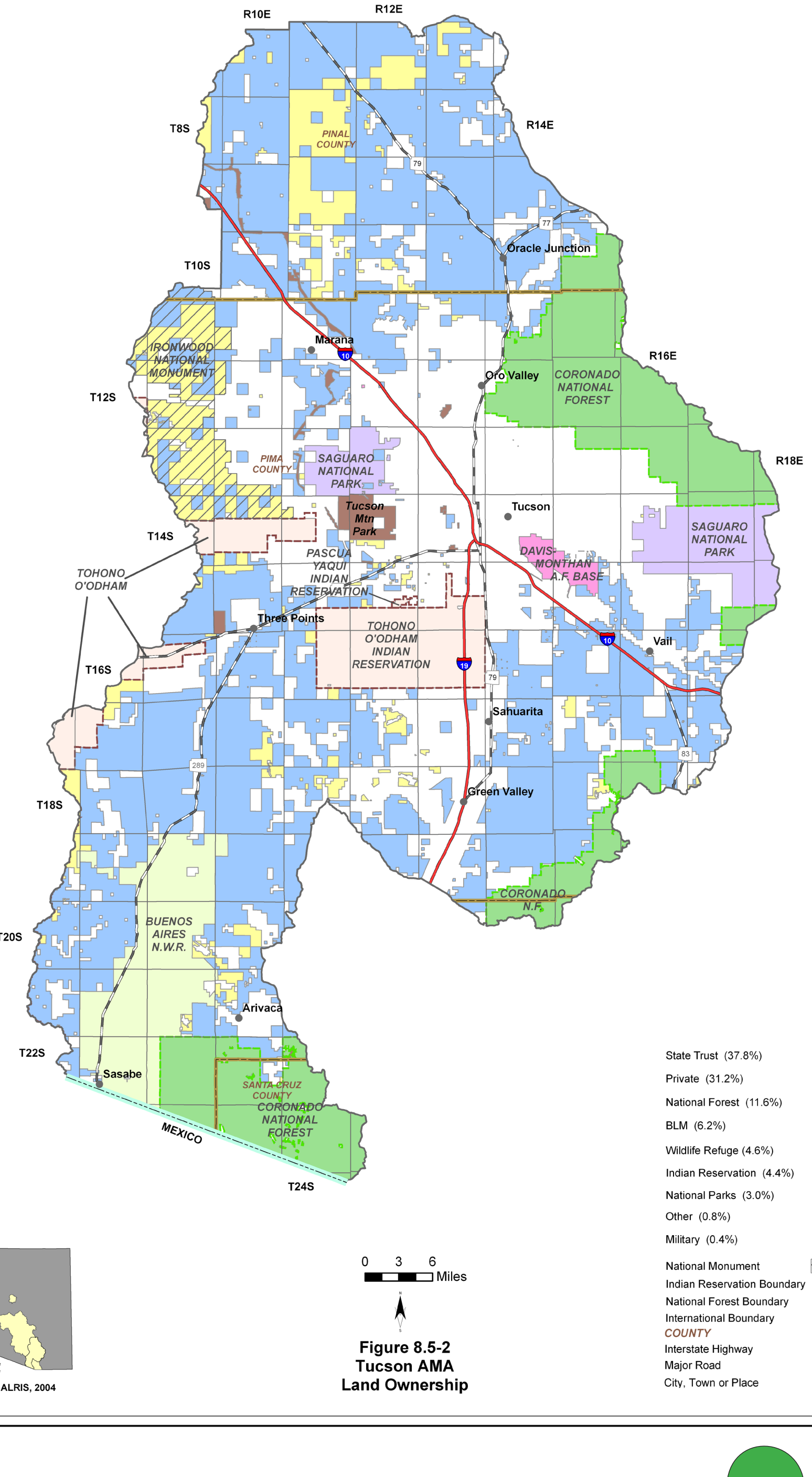
- 68,400 acres of the 83,000-acre Saguaro National Park is designated as the Saguaro Wilderness. (See Figure 8.0-13)
- Land uses include resource conservation and recreation.

Other

- 0.7% of the land is owned and managed by the U.S. Bureau of Reclamation (BOR) and Pima County.
- "Other" includes land in the western portion of the AMA managed by BOR for the Central Arizona Project canal and pumping stations as well as regional parks managed by Pima County.
- Land uses include water infrastructure and recreation.

U.S. Military

- 0.4% of the land is federally owned and managed by the U.S. Military as Davis-Monthan Air Force Base.
- Primary land use is military activity.



Source: ALRIS, 2004

Figure 8.5-2
Tucson AMA
Land Ownership

8.5.3 Climate of the Tucson AMA

Climate data from NOAA/NWS Co-op Network, Evaporation Pan and AZMET stations are complied in Table 8.5-1 and the locations are shown on Figure 8.5-3. Figure 8.5-3 also shows precipitation contour data from the Spatial Climate Analysis Service (SCAS) at Oregon State University. The Tucson AMA does not contain SNOTEL /Snowcourse stations. A description of the climate data sources and methods is found in Volume 1, Section 1.3.3.

NOAA/NWS Co-op Network

- Refer to Table 8.5-1A
- There are 16 NOAA/NWS Co-op Network stations in the AMA. The average monthly maximum temperature occurs in July and is between 79.5°F and 88.5°F and the average monthly minimum temperature occurs in December or January and is between 46.9°F and 52.9°F.
- The highest seasonal rainfall occurs at most stations in the summer (July-September). For the period of record uses, the highest average annual precipitation is 23.41 inches at the Santa Rita Exp Range station and the lowest is 11.38 at the Cortaro station.

Evaporation Pan

- Refer to Table 8.5-1B
- There are two Evaporation Pan stations in the AMA. Elevation at the stations range from 2,300 feet to 2,435 feet and the corresponding annual average evaporation ranges from 111.1 inches to 103.5 inches.

AZMET

- Refer to Table 8.5-1C
- There are two AZMET stations in the AMA. Elevation at the stations range from 1,972 feet to 2,339 feet and the corresponding annual average evaporation rates are 81.77 inches and 76.85 inches.

SCAS Precipitation Data

- See Figure 8.5-3
- Additional precipitation data shows average annual rainfall as high as 38 inches on the AMA boundary at Mount Lemmon and as low as eight inches in the northwestern portion of the AMA near Marana.
- The Tucson AMA has the widest precipitation range of any of the AMAs in the planning area.

Table 8.5-1 Climate Data for the Tucson AMA

A. NOAA/NWS Co-op Network:[1]

Station Name	Elevation (in feet)	Period of Record Used for Averages	Monthly Average Temperature Range (in F)		Average Precipitation (in inches)				
			Max/Month	Min/Month	Winter	Spring	Summer	Fall	Annual
Anvil Ranch	2,750	1971-2000	84.5/Jul	49.6/Jan	2.44	0.81	6.62	2.74	12.61
Cortaro 3 SW	2,271	1948-1976[1]	87.9/Jul	50.6/Jan	1.96	0.91	4.66	3.85	11.38
Green Valley	2,940	1988-2006[1]	86.4/Jul	51.4/Dec	2.66	0.72	8.49	3.58	15.45
Helvetia Santa Rita	4,305	1916-1950	79.5/Jul	46.9/Jan	4.44	1.47	10.39	3.42	19.72
Oracle	4,603	1893-1949[1]	79.8/Jul	45.9/Jan	5.51	1.55	7.47	4.85	19.38
Ruby 4 NW	3,983	1895-1955	79.4/Jul	47.7/Jan	3.96	1.23	10.76	2.99	18.94
Sabino Canyon	2,640	1971-2000	86.2/Jul	52.9/Dec	3.46	0.75	6.24	3.16	13.61
Sahuarita 2 NW	2,690	1956-1972[1]	84.8/Jul	49/Jan	1.47	0.53	7.87	4.35	12.90
Santa Rita Exp Range	4,300	1971-2000	79.4/Jul	49/Jan	5.17	1.51	11.49	5.24	23.41
Sasabe 6 NNE	3,495	1987-2006[1]	80.4/Jul	46.9/Jan	4.09	0.68	8.62	3.83	17.22
Tucson 17 NW	2,560	1971-2000	87.7/Jul	52.6/Jan	3.15	0.69	5.82	2.92	12.58
Tucson Cp Ave Exp Fm	2,329	1971-2000	86.3/Jul	50.6/Jan	3.15	0.83	5.10	3.32	12.40
Tucson Intl Arpt	2,584	1971-2000	86.5/Jul	51.7/Jan	2.68	0.76	5.82	2.91	12.17
Tucson Magnetic Obsy	2,526	1971-2000	86.4/Jul	50.5/Jan	3.84	0.88	5.83	3.31	13.86
Tucson U of A # 1	2,300	1971-2000	87.7/Jul	52.2/Dec,Jan	2.98	0.68	5.01	2.74	11.41
Tucson U of Arizona	2,435	1971-2000	88.5/Jul	54.0/Jan	2.88	0.81	5.40	2.91	12.00

Source: WRCC
Notes:
[1]Stations with incomplete data not shown
[2]Average temperature data from period of record shown; average precipitation data from 1971 - 2000

B. Evaporation Pan:

Station Name	Elevation (in feet)	Period of Record Used for Averages	Avg. Annual Evap (in inches)
Tucson Univ of Arizona	2,435	1894-2005	103.51
Tucson University of Arizona #1	2,300	1982-2005	111.07

Source: WRCC

C. AZMET:

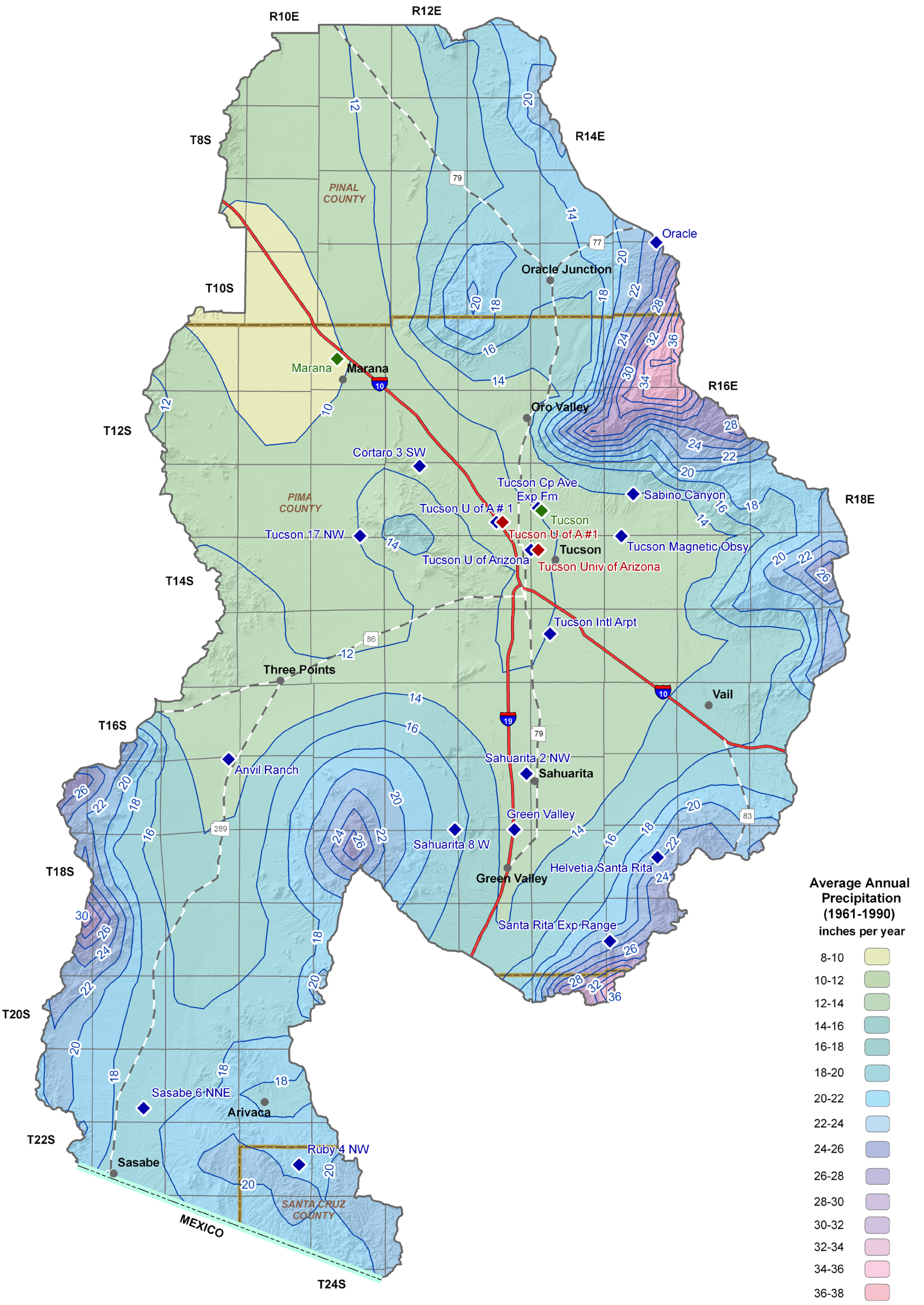
Station Name	Elevation (in feet)	Period of Record Used for Averages	Average Annual Reference Evaportranspiration, in inches *(Number of years to calculate averages)*
Marana	1,972	1999 - current	81.77(*6*)
Tucson	2,339	1999 - current	76.85(*6*)

Source: Arizona Meteorological Network, 2004

D. SNOTEL/Snowcourse:

Station Name	Elevation (in feet)	Period of Record Used	Average Snowpack, at Beginning of the Month, as Inches Snow Water Content					
			Jan.	Feb.	March	April	May	June
None								

Source: NRCS, 2005



Precipitation Data Source: Oregon State University, 1998

Figure 8.5-3
Tucson AMA
Meteorological Stations and Annual Precipitation

8.5.4 Surface Water Conditions in the Tucson AMA

Streamflow data, including average seasonal flow, annual flow and other information are shown in Table 8.5-2. Flood ALERT equipment in the AMA is shown in Table 8.5-3. Flood ALERT equipment information is current up to October 2005. New flood warning gages are routinely added to the ALERT network so the current number of stations may be greater. Reservoir and stockpond data, including maximum storage or maximum surface area, are shown in Table 8.5-4. The location of streamflow gages identified by USGS number, flood ALERT equipment, USGS runoff contours and large reservoirs are shown on Figure 8.5-4. A description of stream data sources and methods is found in Volume 1, Section 1.3.16. A description of reservoir data sources and methods is found in Volume 1, Section 1.3.11. A description of stockpond data sources and methods is found in Volume 1, Section 1.3.15.

Streamflow Data

- Refer to Table 8.5-2.
- Data from 32 stations located at 18 watercourses are shown in the table and on Figure 8.5-4.
- Average seasonal flow is highest at most stations in the summer season (July-September), although watercourses originating in the Santa Catalina and Rincon mountains experience peak flows in the winter season (January-March).
- The largest annual flow recorded in the AMA is 182,136 acre-feet in 1993 at the Santa Cruz River at Cortaro gage with a contributing drainage area of 3,503 square miles.

Flood ALERT Equipment

- Refer to Table 8.5-3.
- There are 65 ALERT gages in the Tucson AMA.

Reservoirs and Stockponds

- Refer to Table 8.5-4.
- The AMA contains three large reservoirs. The largest, Arivaca, has a maximum storage of 2,915 acre-feet.
- All reservoirs are used for recreation. Other reservoir uses include fish and wildlife pond and water supply.
- Surface water is stored or could be stored in 36 small reservoirs.
- There are 1,538 registered stockponds in the Tucson AMA.

Runoff Contour

- Refer to Figure 8.5-4.
- Average annual runoff is highest, two inches per year or 106.7 acre-feet per square mile, in the eastern portion of the AMA and decreases to 0.1 inches, or five acre-feet per square mile, in the northwestern portion of the AMA.

Table 8.5-2 Streamflow Data for the Tucson AMA

Station Number	USGS Station Name	Drainage Area (in mi^2)	Mean Basin Elevation (in feet)	Period of Record	Average Seasonal Flow (% of annual flow)				Annual Flow/Year (in acre-feet)				Years of Record
					Winter	Spring	Summer	Fall	Minimum	Median	Mean	Maximum	
9481770	Santa Cruz near Amado	NA	3,040	2003-current (real-time)	No statistics run, less than 3 years of data								
9482000	Santa Cruz River at Continental	1,682	2,820	1940-current (real-time)	23	0	45	32	147 (2001)	5,651	15,996	116,202 (1983)	51
9482400	Airport Wash at Tucson	15	2,460	1965-1981 (discontinued)	6	1	78	16	43 (1973)	164	301	976 (1970)	15
9482500	Santa Cruz River at Tucson	2,222	2,317	1998-current (real-time)	2	2	63	33	1,280 (2001)	4,683	9,780	30,878 (2000)	7
9482950	Railroad Wash at Tucson	2	2,430	1975-1983 (discontinued)	25	2	51	22	35 (1981)	132	155	307 (1982)	7
9483000	Tucson Arroyo at Vine Ave.	8	2,412	1944-1981 (discontinued)	14	2	65	19	17 (1947)	588	629	1,424 (1971)	36
9483010	High School Wash at Tucson	1	2,415	1973-1983 (discontinued)	22	4	56	18	42 (1981)	60	78	157 (1982)	9
9483100	Tanque Verde Creek near Tucson	43	2,720	1959-1974 (discontinued)	48	4	20	29	1,775 (1969)	5,430	6,615	14,781 (1965)	14
9483300	Sabino Creek near Mt Lemmon	3	NA	1951-1959 (discontinued)	46	23	20	11	86 (1956)	1,296	1,135	2,207 (1952)	7
9484000	Sabino Creek near Tucson	36	2,720	1987-current (real-time)	56	10	21	13	1,233 (2002)	9,994	14,709	40,846 (1993)	17
9484200	Bear Creek near Tucson	16	2,670	1959-1974 (discontinued)	55	4	11	30	1,531 (1961)	2,370	3,507	8,300 (1965)	14
9484500	Tanque Verde Creek at Tucson.	219	2,470	1940-current (real-time)	68	6	11	15	11 (2002)	8,323	17,050	97,636 (1993)	20
9484590	Davidson Canyon Wash near Vail	51	3,420	1968-1975 (discontinued)	5	4	86	5	0 (1973)	520	523	1,022 (1970)	6
9484600	Pantano Wash near Vail	457	3,205	1959-current (real-time)	21	7	59	14	1,170 (1997)	3,165	4,342	11,418 (1998)	30
9485000	Rincon Creek	45	3,120	1952-2003 (real-time)	59	5	19	17	14 (1956)	3,492	4,746	21,665 (1993)	35
9485390	Atterbury Wash Tributary at Tucson	5	2,710	1975-1983 (discontinued)	27	3	60	10	41 (1979)	134	153	361 (1982)	7

Table 8.5-2 Streamflow Data for the Tucson AMA

Station Number	USGS Station Name	Drainage Area (in mi^2)	Mean Basin Elevation (in feet)	Period of Record	Average Seasonal Flow (% of annual flow)				Annual Flow/Year (in acre-feet)				Years of Record
					Winter	Spring	Summer	Fall	Minimum	Median	Mean	Maximum	
9485450	Pantano Wash at Broadway Blvd.	599	2,569	1998-current (real-time)	0	6	71	22	9 (2001)	373	2,410	7,055 (2000)	5
9485500	Pantano Wash near Tucson	602	2,494	1940-1977 (discontinued)	No statistics run, less than 3 years of data								
9485550	Arcadia Wash at Tucson	3	2,485	1975-1983 (discontinued)	35	4	51	10	58 (1977)	260	252	556 (1982)	7
9485700	Rillito Creek at Dodge Boulevard	871	2,380	1990-current (real-time)	62	4	20	14	1,585 (2002)	10,710	19,848	100,553 (1993)	14
9485850	Rillito Creek	892	NA	1913-1975 (discontinued)	34	1	40	25	266 (1924)	6,937	11,825	114,897 (1914)	60
9486055	Rillito Creek at La Cholla Blvd	922	2,260	1995-2006 (real-time)	19	3	57	21	0 (1997)	4,159	7,207	23,420 (2000)	10
9486100	Canada Del Oro near Oracle Junction	42	NA	1984-1991 (discontinued)	59	16	11	15	262 (1989)	2,717	3,041	7,983 (1985)	6
9486300	Canada Del Oro near Tucson	250	2,380	1965-1978 (discontinued)	6	0	34	59	39 (1968)	610	1,039	5,402 (1967)	12
9486350	Canada Del Oro below Ina Road	255	2,240	1995-current (real-time)	6	0	80	13	24 (2001)	690	1,285	5,520 (2003)	10
9486500	Santa Cruz River at Cortaro	3,503	2,100	1939-current (real-time)	27	10	39	24	1,706 (1956)	38,655	41,897	182,136 (1993)	53
9486520	Santa Cruz River at Trico Road	3,641	1,910	1989-current (real-time)	41	8	33	19	8,269 (1991)	28,352	30,931	92,787 (1993)	16
9486580	Arivaca Creek at Arivaca	57	3,600	1995-2001 (discontinued)	23	7	22	48	213 (1997)	520	642	1,505 (2000)	5
9486590	Arivaca Creek near Arivaca	NA	3,580	2002-current (real-time)	24	5	65	6	37 (2005)	112	103	160 (2003)	3
9486600	Arivaca Wash near Arivaca	78	NA	1967-1972 (discontinued)	16	4	32	48	320 (1970)	1,099	1,619	3,957 (1971)	4
9486800	Altar Wash near Three Points	463	2,975	1966-current (real-time)	2	4	90	4	363 (1995)	2,880	3,826	14,607 (1970)	21
9487000	Brawley Wash near Three Points	776	2,540	1992-current (real-time)	2	2	90	7	160 (2002)	2,421	3,828	13,499 (1999)	13

Sources: USGS NWIS, USGS 1998 and USGS 2005.

Notes:
NA = Not available
Statistics based on Calendar Year
Annual Flow statistics based on monthly values
Summation of Average Seasonal Flows may not equal 100 due to rounding.
Period of record may not equal Year of Record used for annual Flow/Year statistics due to only using years with a 12 month record

Table 8.5-3 Flood ALERT Equipment in the Tucson AMA

Station ID	Station Name	Station Type	Install Date	Responsibility
1010	Golder Ranch	Precipitation	3/1/1983	Pima Co FCD
1020	Oracle Ranger Station	Precipitation	3/1/1983	Pima Co FCD
1040	Dodge Tank	Precipitation	3/1/1983	Pima Co FCD
1050	Cherry Spring	Precipitation	3/1/1983	Pima Co FCD
1060	Pig Spring	Precipitation	3/1/1983	Pima Co FCD
1070	Catalina State Park	Precipitation	3/1/1983	Pima Co FCD
1080	Rancho Solano	Precip/Stage	3/1/1983	Pima Co FCD
1090	Mt. Lemmon WS	Weather Station	3/1/1983	Pima Co FCD
1100	Golder Ranch Road Bridge	Precip/Stage	3/1/1983	Pima Co FCD
1200	CDO Ina	Precip/Stage	3/1/1992	Pima Co FCD
1230	Oro Valley Public Works	Precipitation	10/1/2001	Pima Co FCD
1240	Moore Rd / La Cholla	Precipitation	10/1/2001	Pima Co FCD
1250	Pima Wash/Ina	Precip/Stage	NA	Pima Co FCD
1260	Big Wash / RV Blvd (Vistoso)	Precip/Stage	NA	Pima Co FCD
2020	Park Tank	Precipitation	12/1/1996	Pima Co FCD
2030	Italian Trap	Precipitation	7/1/1985	Pima Co FCD
2040	White Tank	Precipitation	6/1/1985	Pima Co FCD
2050	Bellota Ranch	Precipitation	6/1/1985	Pima Co FCD
2070	Chiva Tank	Precip/Stage	6/1/1986	Pima Co FCD
2080	Alamo Tank	Precipitation	6/1/1985	Pima Co FCD
2090	Tanque Verde Guest Ranch	Precip/Stage	6/1/1987	Pima Co FCD

Table 8.5-3 Flood ALERT Equipment in the Tucson AMA

Station ID	Station Name	Station Type	Install Date	Responsibility
2100	Swan Rd	Precipitation	9/1/2000	Pima Co FCD
2110	Tanque Verde Rd @ TV Wash	Precip/Stage	2/1/1988	Pima Co FCD
2120	Tanque Verde Sabino Bridge	Precip/Stage	7/1/1987	Pima Co FCD
2150	Whitetail	Precipitation	7/1/1985	Pima Co FCD
2160	Sabino Dam	Precip/Stage	6/1/1990	Pima Co FCD
2170	Ventana Sunrise	Precip/Stage	11/1/1990	Pima Co FCD
2190	El Marah	Precipitation	8/1/1994	Pima Co FCD
2200	AC at Tanque Verde Road	Stage	3/1/1993	Pima Co FCD
2210	Catalina Booster	Precipitation	2/1/1999	Pima Co FCD
2220	AC Park	Precipitation	7/1/1994	Pima Co FCD
2230	Camino Rinconada	Precipitation	9/1/1994	Pima Co FCD
2240	Molino Canyon	Precipitation	9/1/1994	Pima Co FCD
2300	Well D-37	Precipitation	8/1/1994	Pima Co FCD
2310	Well E-23	Precipitation	8/1/1994	Pima Co FCD
2320	Well C-51	Precipitation	3/1/1993	Pima Co FCD
2330	Kolb Booster	Precipitation	10/1/1994	Pima Co FCD
2350	Rillito Dodge	Precip/Stage	7/1/1987	Pima Co FCD
2360	Rillito La Cholla	Precip/Stage	11/1/1994	Pima Co FCD
2370	Alamo	Precip/Stage	8/1/1986	Pima Co FCD
2380	Ruthraff	Precipitation	9/1/2000	Pima Co FCD
2390	Finger Rock Skyline	Precip/Stage	NA	Pima Co FCD
4100	Manning Camp WS	Weather Station	12/1/1989	Pima Co FCD

Table 8.5-3 Flood ALERT Equipment in the Tucson AMA

Station ID	Station Name	Station Type	Install Date	Responsibility
4110	Rincon Creek	Precip/Stage	6/1/1990	Pima Co FCD
4160	Well E-8	Precipitation	10/1/1994	Pima Co FCD
4180	Pantano Houghton	Precipitation	2/1/1993	Pima Co FCD
4220	Rancho del Lago	Precipitation	3/1/1993	Pima Co FCD
4250	Pantano Vail	Precip/Stage	9/1/1987	Pima Co FCD
4310	Davidson Canyon	Precip/Stage	3/1/1993	Pima Co FCD
6020	Ina Road at SCR	Precip/Stage	4/1/1998	Pima Co FCD
6040	SCR Valencia	Precip/Stage	3/1/1993	Pima Co FCD
6050	SCR Continental	Precip/Stage	3/1/1993	Pima Co FCD
6080	Tubac	Precip/Stage	NA	Pima Co FCD
6110	Avra Valley Air Park	Precip/Stage	3/1/1993	Pima Co FCD
6230	Ajo Detention Basin	Precip/Stage	NA	Pima Co FCD
6240	Country Club/Ajo	Precipitation	9/1/2000	Pima Co FCD
6260	Tucson Electric Power	Precipitation	NA	Pima Co FCD
6270	Pima Air Museum	Precipitation	NA	Pima Co FCD
6280	Wilmot	Precipitation	10/1/2001	Pima Co FCD
6290	Corona	Precipitation	3/1/1993	Pima Co FCD
6310	Keystone Peak Repeater	Repeater/Precip	3/1/1993	Pima Co FCD
6320	Tinaja Ranch WS	Weather Station	3/1/1993	Pima Co FCD
6330	Anamax	Precipitation	3/1/1993	Pima Co FCD
6350	Elephant Head	Precipitation	3/1/1993	Pima Co FCD
6370	Arivaca	Precipitation	NA	Pima Co FCD

Table 8.5-4 Reservoirs and Stockponds in the Tucson AMA

A. Large Reservoirs (500 acre-feet capacity and greater)

MAP KEY	RESERVOIR/LAKE NAME *(Name of dam, if different)*	OWNER/OPERATOR	MAXIMUM STORAGE (AF)	USE[1]	JURISDICTION
1	Arivaca	AZ Game and Fish Dept	2,915	R	State

Source: U.S. Army Corps of Engineers 2005

B. Other Large Reservoirs (50 acre surface area or greater)[2]

MAP KEY	RESERVOIR/LAKE NAME *(Name of dam, if different)*	OWNER/OPERATOR	MAXIMUM SURFACE AREA (acres)	USE[1]	JURISDICTION
2	Kino Environmental Restoration Project (KERP)	Pima County Flood Control	84	F,R,S	County
3	Aguirre	U.S.Fish and Wildlife Service	51	F,R	Federal

Source: USGS 2005

C. Small Reservoirs (greater than 15 acre-feet and less than 500 acre-feet capacity)

Total number: 8
Total maximum storage: 600 acre-feet

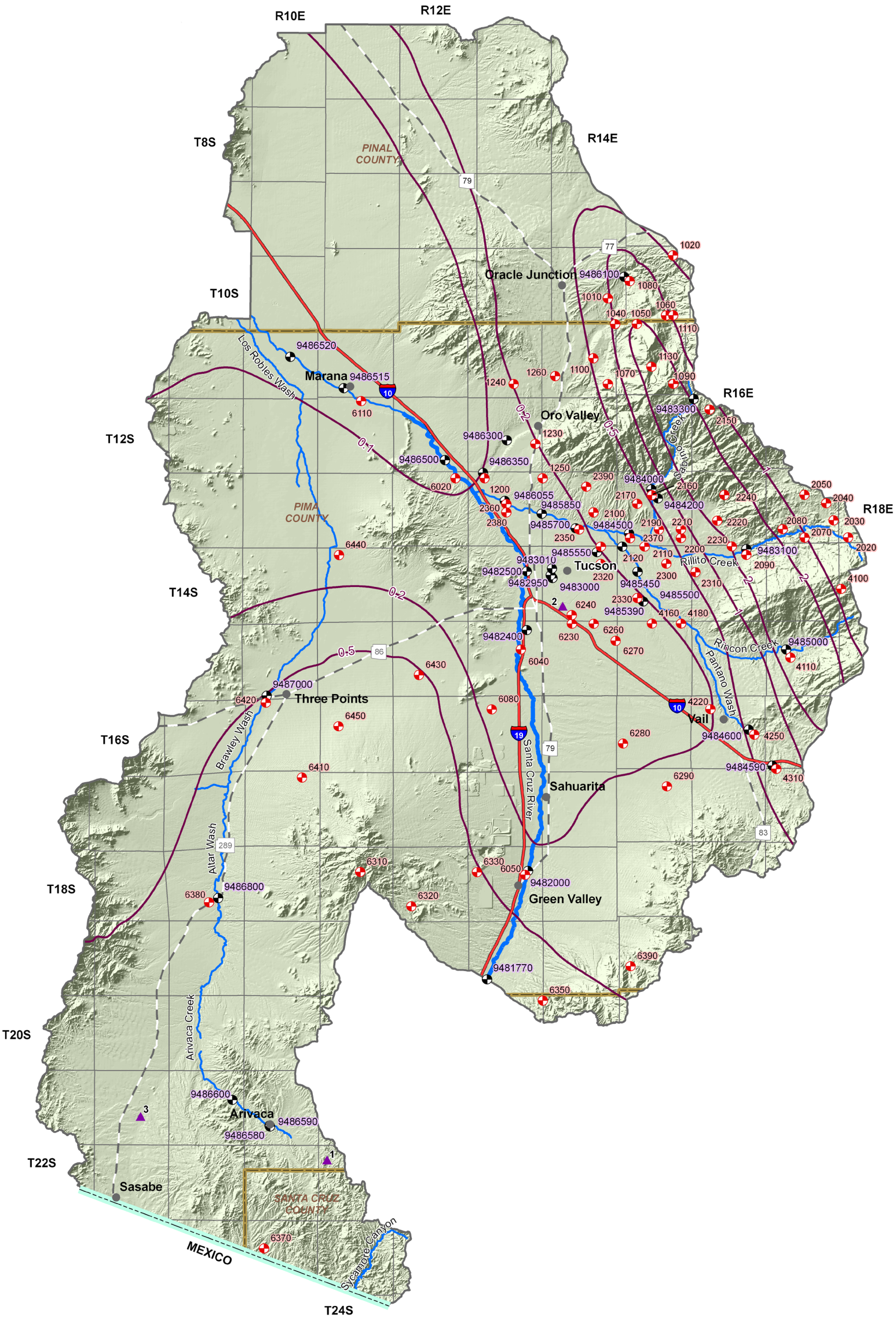
D. Other Small Reservoirs (between 5 and 50 acres surface area)[2]

Total number: 28
Total surface area: 338 acres

E. Stockponds (up to 15 acre-feet capacity)

Total number: 1,538

Notes:
[1]F = Fish & Wildlife pond, R = Recreation, S = Water Supply
[2]Capacity data is not available to ADWR



Stream Data Source: ALLRIS, 2005

0 3 6 Miles

Figure 8.5-4
Tucson AMA
Surface Water Conditions

USGS Annual Runoff Contour for 1951-1980 (in inches)
Stream Channel (width of line reflects stream order)
Large Reservoir
USGS Gage and Station ID
Flood ALERT Equip. & Station ID
International Boundary
COUNTY
Interstate Highway
Major Road
City, Town or Place

8.5.5 Perennial/Intermittent Streams and Springs in the Tucson AMA

Major and minor springs with discharge rates and date of measurement, and the total number of springs in the AMA are shown in Table 8.5-5. The locations of major springs and perennial and intermittent streams are shown on Figure 8.5-5. A description of data sources and methods for intermittent and perennial reaches is found in Volume 1, Section 1.3.16. A description of spring data sources and methods is found in Volume 1, Section 1.3.14.

- Perennial streams include Romero Canyon, Sabino Canyon, Cienega Creek and Sycamore Canyon. An approximately 9-mile effluent-dependent reach of the Santa Cruz River is perennial due to discharges from the Roger and Ina Road WWTPs.
- Intermittent streams include the Santa Cruz River in the center of the AMA, and stream segments near the eastern AMA boundary and in Santa Cruz County.
- There are eight major springs with a measured discharge of 10 gallons per minute (gpm) or greater at any time.
- Springs with measured discharge of 1 to 10 gpm are not mapped but coordinates are given in Table 8.5-5B. There are three minor springs.
- Listed discharge rates may not be indicative of current conditions. Measurement dates are not available for six springs and the remainder were measured during or prior to 1982.
- The total number of springs, regardless of discharge, identified by the USGS or ALRIS varies from 162 to 187, depending on the database reference.

Table 8.5-5 Springs in the Tucson AMA

A. Major Springs (10 gpm or greater):

Map Key	Name	Location[1]		Discharge (in gpm)	Date Discharge Measured
		Latitude	Longitude		
1	Agua Caliente	321652	1104348	250[2]	6/29/1942
2	Fraguita	313206	1112037	112	5/19/1981
3	Spring No 1	313427	1111925	42[3]	NA
4	Bobo Spring	315630	1103637	20[3]	NA
5	South Spring	315643	1103637	19[3]	NA
6	Bear Wallow	322517	1104352	17	6/29/1982
7	La Cebadilla	321442	1104116	>10[3]	NA
8	Mescal	315643	1103622	10[3]	NA

B. Minor Springs (1 to 10 gpm):

Name	Location[1]		Discharge (in gpm)	Date Discharge Measured
	Latitude	Longitude		
Unnamed	315632	1103640	7	NA
Stone	313400	1104648	3	10/6/1941
Horse	321947	1104024	1	11/13/1952

C. Total number of springs, regardless of discharge, identified by USGS (see ALRIS, 2005 and USGS, 2006): 162-187

Notes:

[1] Location datum is NAD 27

[2] More recent measurements range from 10-170 gpm but exact date of measurements are unknown

[3] Data obtained from Pima County

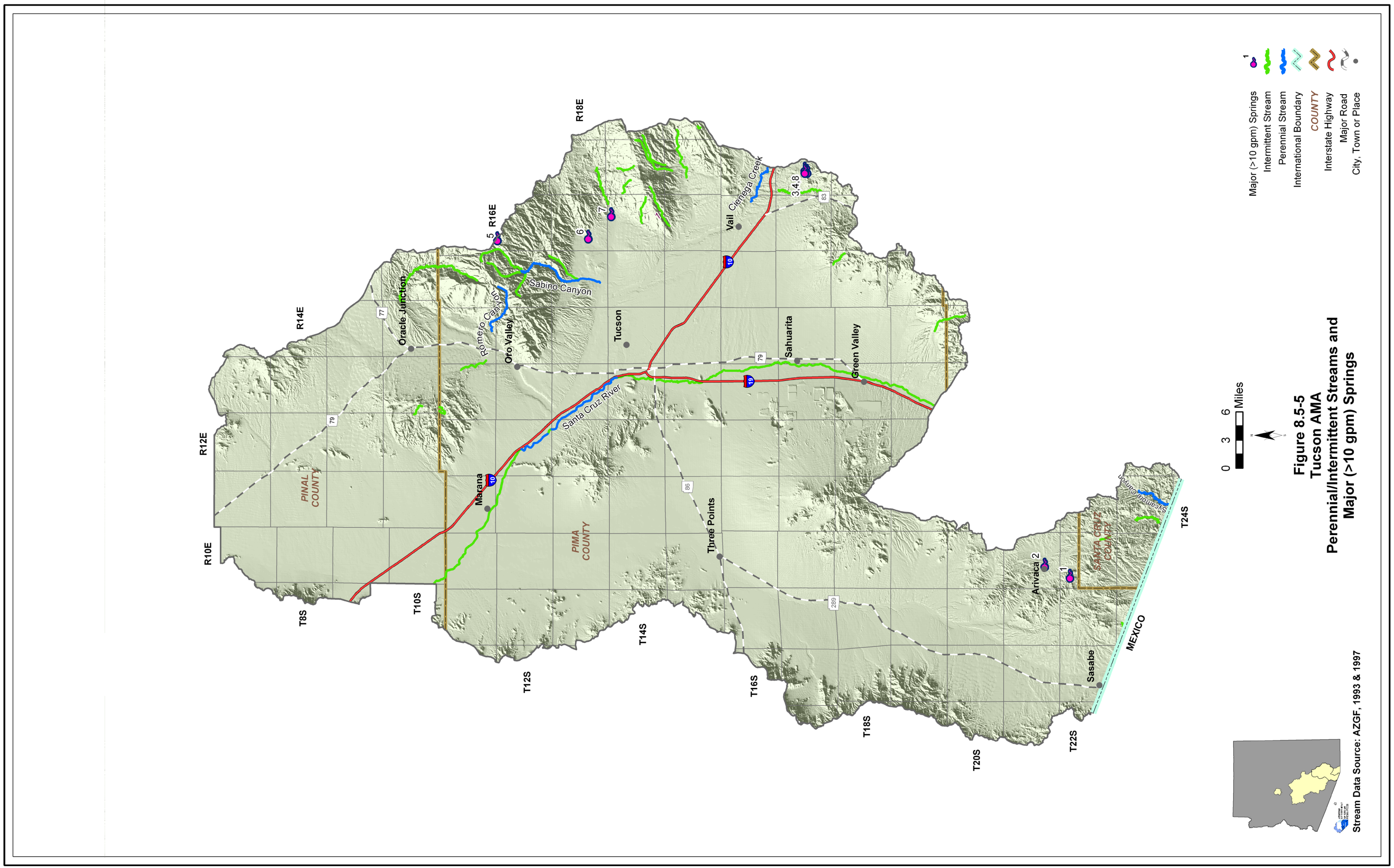


Figure 8.5-5
Tucson AMA
Perennial/Intermittent Streams and Major (>10 gpm) Springs

8.5.6 Groundwater Conditions of the Tucson AMA

Major aquifers, well yields, estimated natural recharge, number of index wells and date of last water-level sweep are shown in Table 8.5-6. Figure 8.5-6 shows aquifer flow direction and water-level change between 1994-1995 and 2004-2005 for the entire Tucson AMA. Figures 8.5-6A-B show depth to water during 2004-2005 and water-level change between 1994-1995 and 2004-2005 for selected wells by sub-basin. Figure 8.5-7 contains hydrographs for selected wells shown on Figures 8.5-6A-B. Figure 8.5-8 shows well yields in five yield categories. Underground Storage Facilities (USF) and Groundwater Savings Facilities (GSF) are shown on Table 8.5-7 with facility name, facility permit number and type, permittee name, permitted acre-feet per year and water source. Locations of USFs and GSFs are shown on Figure 8.5-9. A description of aquifer data sources and methods is found in Volume 1, Section 1.3.2. A description of well data sources and methods, including water-level changes and well yields, is found in Volume 1, Section 1.3.19.

Major Aquifers

- Refer to Table 8.5-6 and Figure 8.5-6
- The major aquifers are recent stream alluvium and basin fill including the Fort Lowell Formation and the Tinaja Beds.
- In the Upper Santa Cruz sub-basin groundwater flows from the mountains along the eastern AMA boundary toward the center of the AMA then north-northwest. In the Avra Valley Sub-basin groundwater flows from south to north.

Well Yields

- Refer to Table 8.5-6 and Figure 8.5-8
- As shown on Figure 8.5-8, well yields are generally between 100 and 1,000 gallons per minute (gpm).
- One source of well yield information, based on 1,063 wells, indicates that the median well yield is 520 gpm.

Natural Recharge

- Refer to Table 8.5-6
- Natural recharge in the Tucson AMA is approximately 60,800 acre-feet per year.
- Principal sources of natural recharge are groundwater inflow from the south, infiltration of runoff into stream channels, and mountain front recharge.

Water Level

- Refer to Figure 8.5-6A-B. Water levels are shown for wells measured in 2004-2005.
- The Department annually measures 137 index wells in this AMA; hydrographs for nine index wells are shown on Figure 8.5-7.
- The deepest water level shown is 633 feet in the vicinity of Three Points in the Avra Valley sub-basin (Figure 8.5-6A), and the shallowest is four feet in the eastern portion of the Upper Santa Cruz sub-basin (Figure 8.5-7B).

Recharge Sites

- Refer to Table 8.5-7 and Figure 8.5-9.
- There are 10 active USFs and six active GSFs.
- Total permitted storage capacity for USFs is 293,000 acre-feet per year and total permitted storage capacity for GSFs is 82,986.

Table 8.5-6 Groundwater Data for the Tucson AMA

Basin Area, in square miles:	3,866	
Major Aquifer(s):	**Name and/or Geologic Units**	
	Recent Stream Alluvium	
	Basin Fill (Fort Lowell Formation)	
	Basin Fill (Tinaja Beds)	
Well Yields, in gal/min:	Range 1-4,249 Median 630 (879 wells measured)	ADWR GWSI
	Range 2 - 7,977 Median 520 (1,063 wells reported)	ADWR Wells55 (>10-inch diameter)
Estimated Natural Recharge, in acre-feet/year:	60,800	ADWR Tucson TMP
Current Number of Index Wells:	137	
Date of Last Water-level Sweep:	2005 (701 well measurements)	

TMP = Third Management Plan

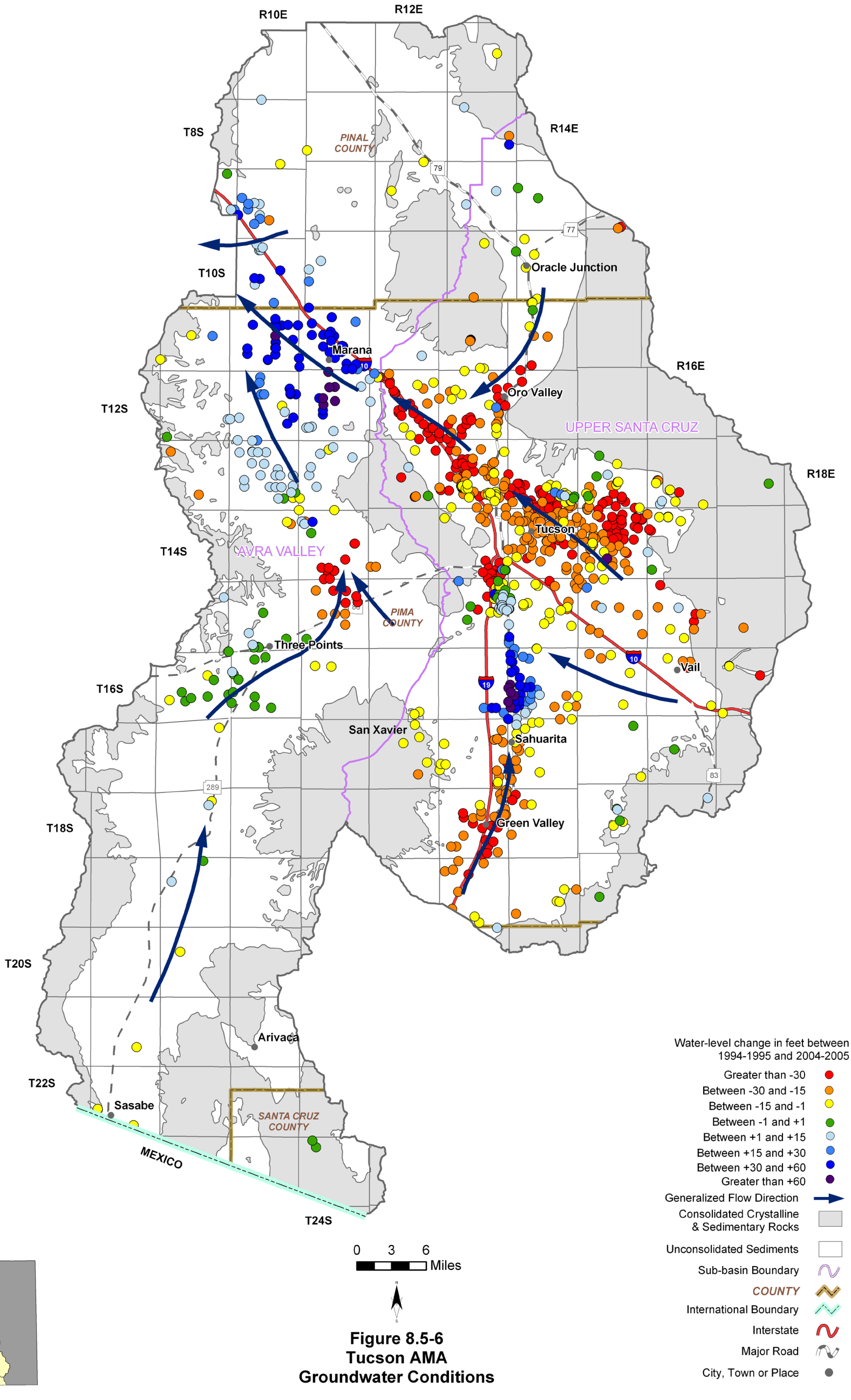
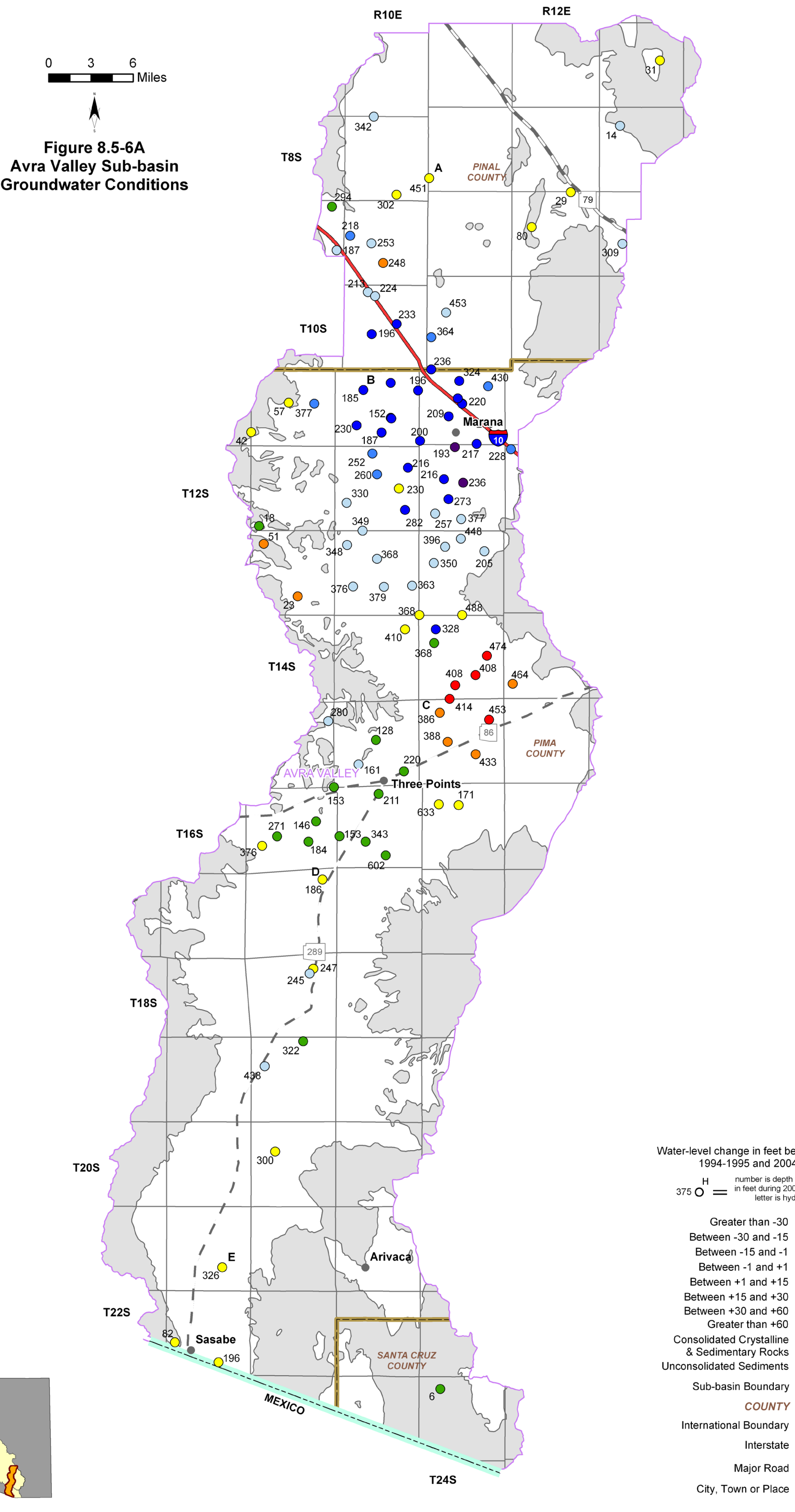


Figure 8.5-6
Tucson AMA
Groundwater Conditions

0 3 6 Miles

Figure 8.5-6A
Avra Valley Sub-basin
Groundwater Conditions



Water-level change in feet between 1994-1995 and 2004-2005

375 H — number is depth to water in feet during 2004-2005; letter is hydrograph

- Greater than -30
- Between -30 and -15
- Between -15 and -1
- Between -1 and +1
- Between +1 and +15
- Between +15 and +30
- Between +30 and +60
- Greater than +60
- Consolidated Crystalline & Sedimentary Rocks
- Unconsolidated Sediments
- Sub-basin Boundary
- COUNTY
- International Boundary
- Interstate
- Major Road
- City, Town or Place

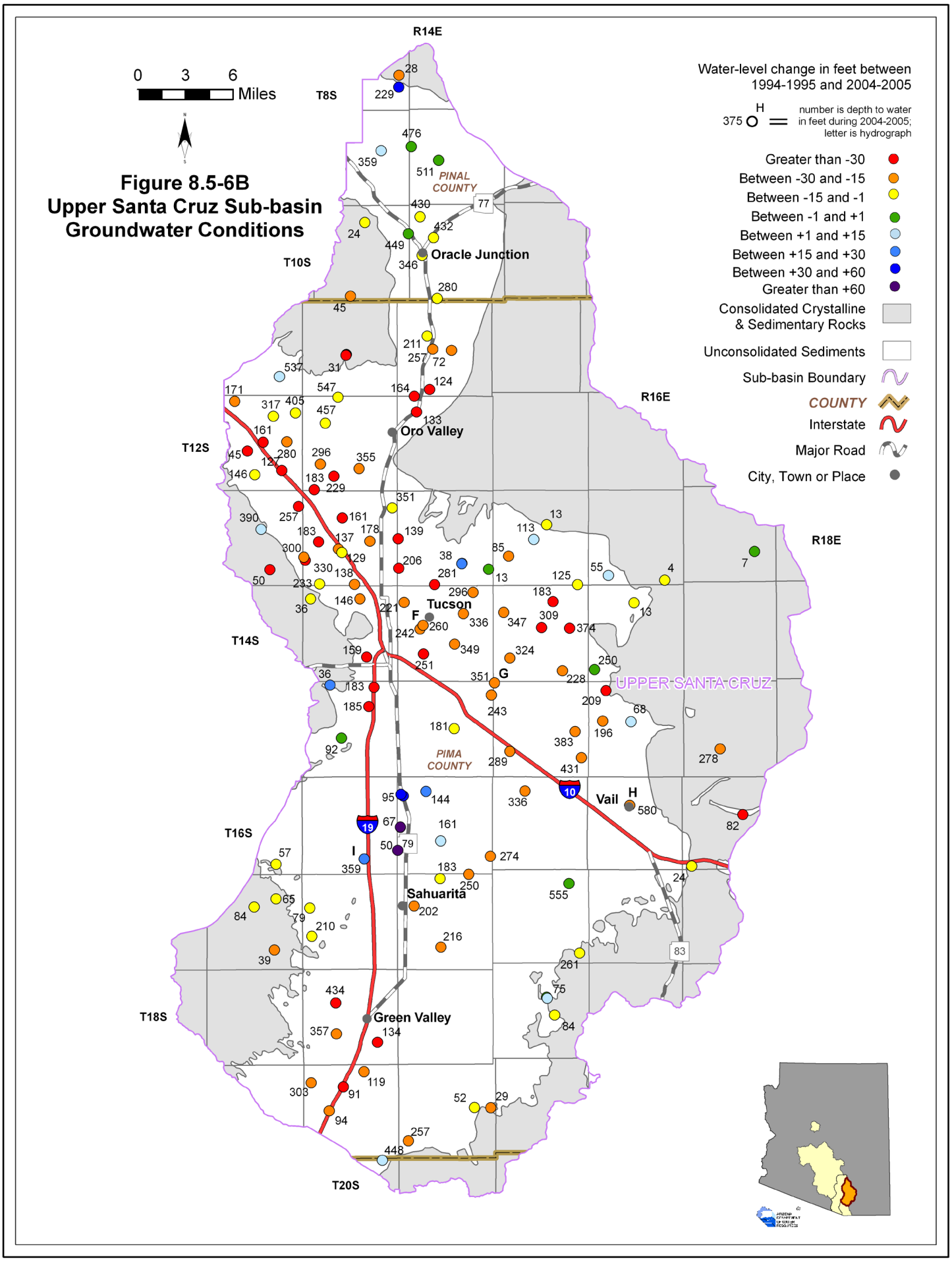


Figure 8.5-6B
Upper Santa Cruz Sub-basin
Groundwater Conditions
0 3 6
Miles
Water-level change in feet between
1994-1995 and 2004-2005
375 H number is depth to water in feet during 2004-2005; letter is hydrograph
Greater than -30
Between -30 and -15
Between -15 and -1
Between -1 and +1
Between +1 and +15
Between +15 and +30
Between +30 and +60
Greater than +60
Consolidated Crystalline & Sedimentary Rocks
Unconsolidated Sediments
Sub-basin Boundary
COUNTY
Interstate
Major Road
City, Town or Place
R14E
R16E
R18E
T8S
T10S
T12S
T14S
T16S
T18S
T20S
PINAL COUNTY
PIMA COUNTY
UPPER SANTA CRUZ
Oracle Junction
Oro Valley
Tucson
Sahuarita
Green Valley
Vail
F
G
H
I
10
19
77
83

Figure 8.5-7
Tucson Active Management Area
Hydrographs Showing Depth to Water in Selected Wells

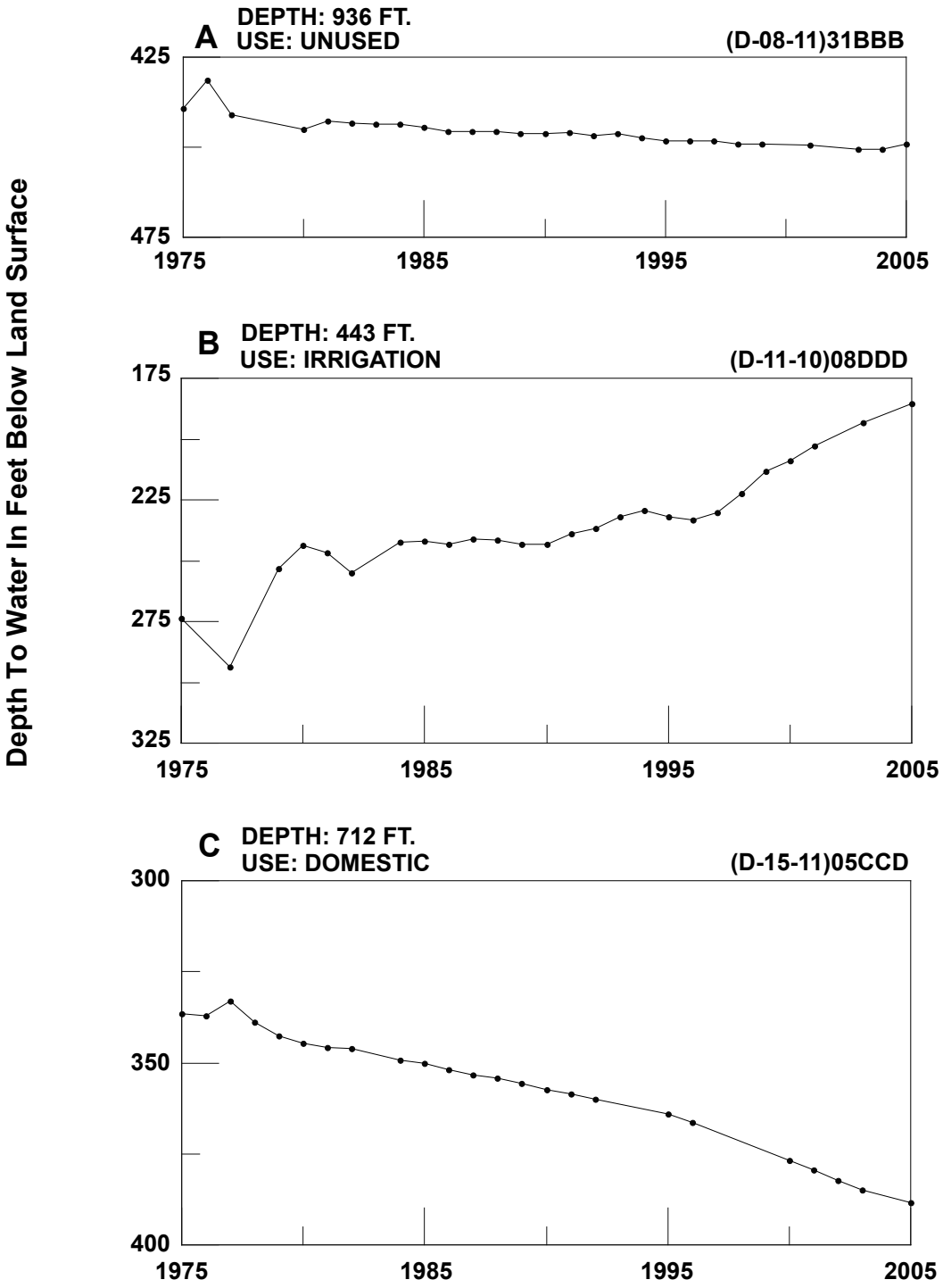


Figure 8.5-7 (cont)
Tucson Active Management Area
Hydrographs Showing Depth to Water in Selected Wells

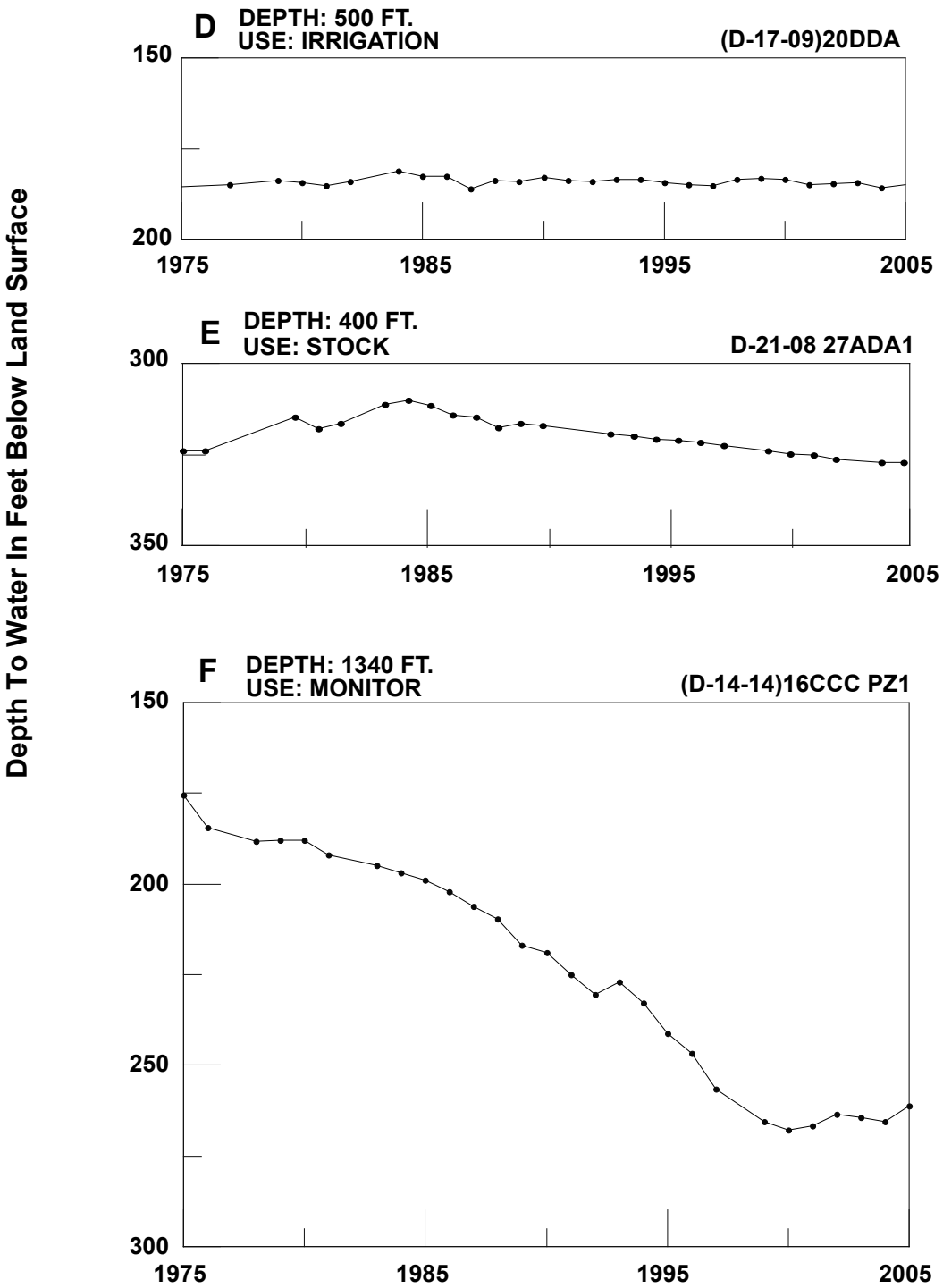
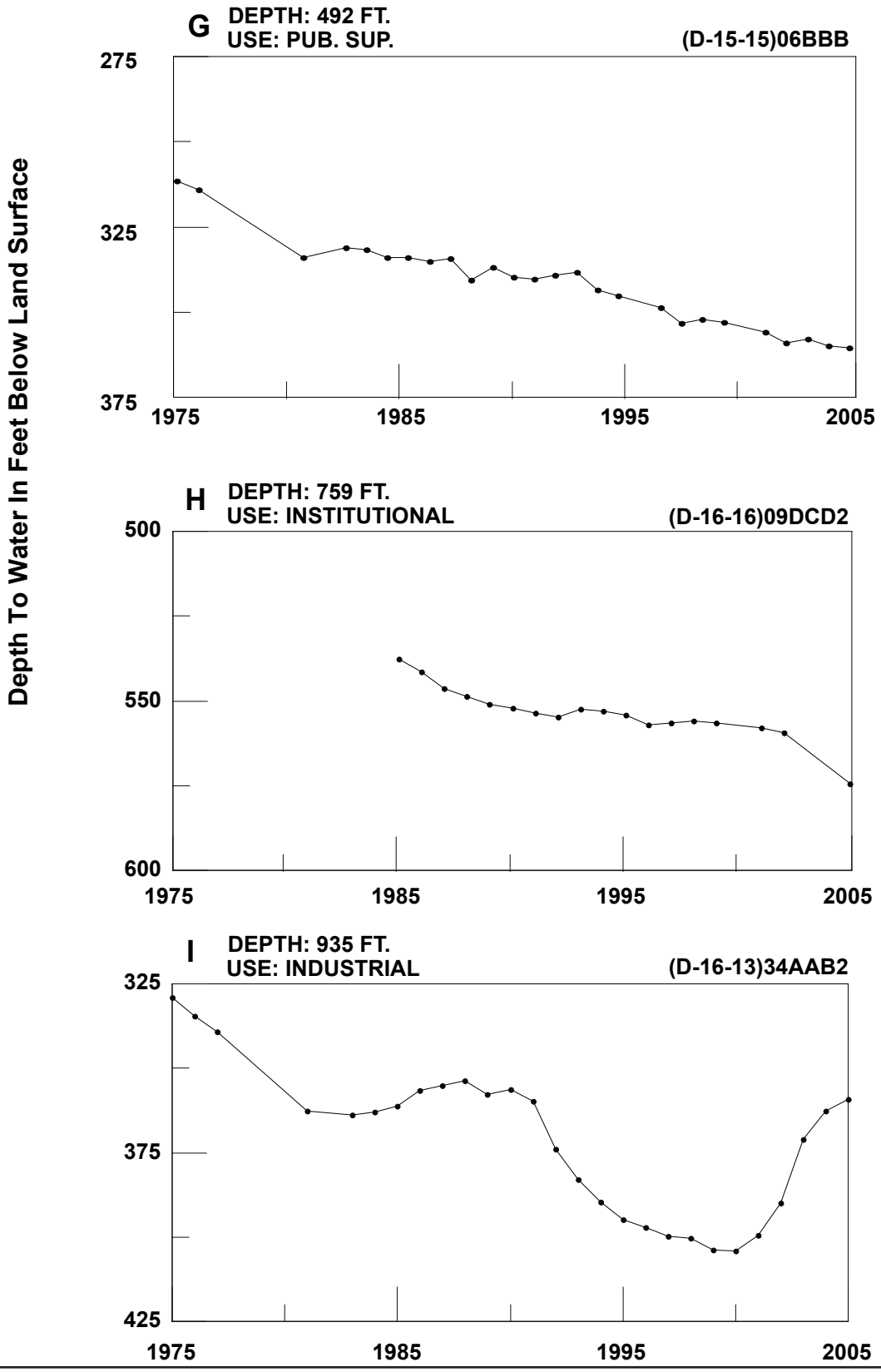


Figure 8.5-7 (cont)
Tucson Active Management Area
Hydrographs Showing Depth to Water in Selected Wells



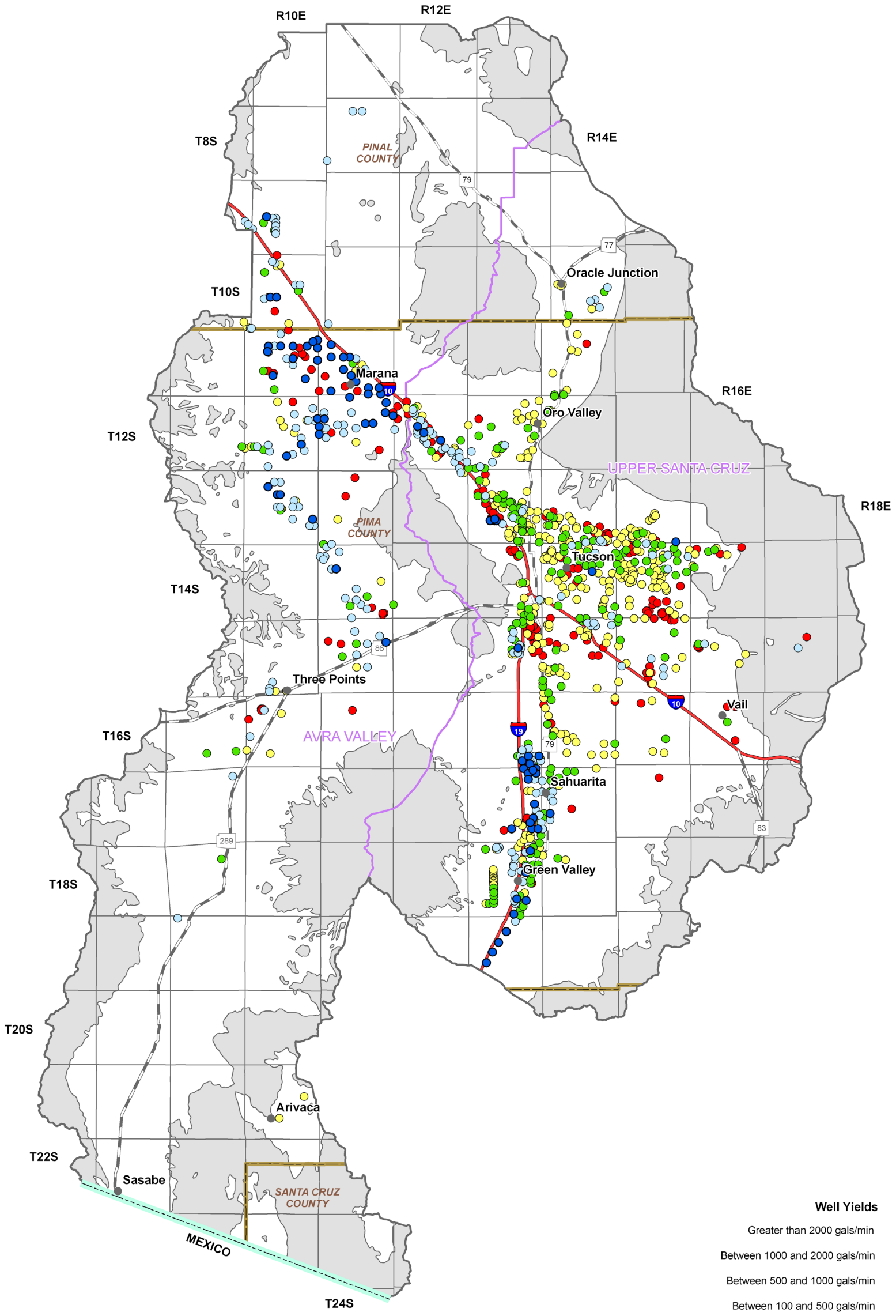


Figure 8.5-8
Tucson AMA
Well Yields

Table 8.5-7 Recharge Sites in the Tucson AMA

FACILITY NAME	FACILITY NUMBER	PERMITTEE NAME	FACILITY TYPE	PERMITTED AF/YEAR	WATER SOURCE
AVRA VALLEY	71-564896.0001	CAWCD	CONSTRUCTED	11,000	C
CENTRAL AVRA VALLEY STORAGE AND RECOVERY PROJECT (CAVSARP)	71-578806.0001	CITY OF TUCSON/TUCSON WATER	CONSTRUCTED	80,000	C
LOWER SANTA CRUZ CONSTRUCTED	71-561366.0002	PCFCD/CAWCD	CONSTRUCTED	50,000	C
LOWER SANTA CRUZ MANAGED	71-591928.0000	CITY OF TUCSON,MARANA,CMID, AVIDD,PIMA COUNTY, ET AL	MANAGED	43,000	E
MARANA HIGH PLAINS	71-563876.0002	PCFCD/TOWN OF MARANA	CONSTRUCTED	600	S,E
PIMA MINE ROAD	71-577501.0001	CAWCD	CONSTRUCTED	30,000	C
ROBSON RANCH QUAIL CREEK	71-581379.0001	ROBSON RANCH QUAIL CREEK	CONSTRUCTED	2,240	E
SANTA CRUZ MANAGED	71-545944.0001	CITY OF TUCSON/USBOR	MANAGED	9,307	E
SOUTHERN AVRA VALLEY STORAGE AND RECOVERY PROJECT (SAVSARP)	71-211276.0000	CITY OF TUCSON/TUCSON WATER	CONSTRUCTED	60,000	C
SWEETWATER	71-520083.0000	CITY OF TUCSON/TUCSON WATER	CONSTRUCTED	6,500	E
TOWN OF SAHUARITA WWTP	71-595209.0000	TOWN OF SAHUARITA	CONSTRUCTED	896	E

B. Groundwater Savings Facilities

PERMITEE/FACILITY NAME	FACILITY NUMBER	PERMITTED AF/YEAR	WATER SOURCE
BKW / MILEWIDE	72-563502.0001	627	C
BKW FARMS	72-538133.0002	16,615	C
CMID	72-538100.0004	20,000	C
FARMERS INVESTMENT COMPANY (FICO)	72-584465.0001	22,000	C
KAI - AVRA	72-564430.0001	12,513	C
KAI FARMS - RED ROCK	72-558092.0002	11,231	C

Notes:
C - CAP
E - Effluent
S - Surface Water
AVIDD - Avra Valley Irrigation and Drainage District
CAWCD - Central Arizona Water Conservation District

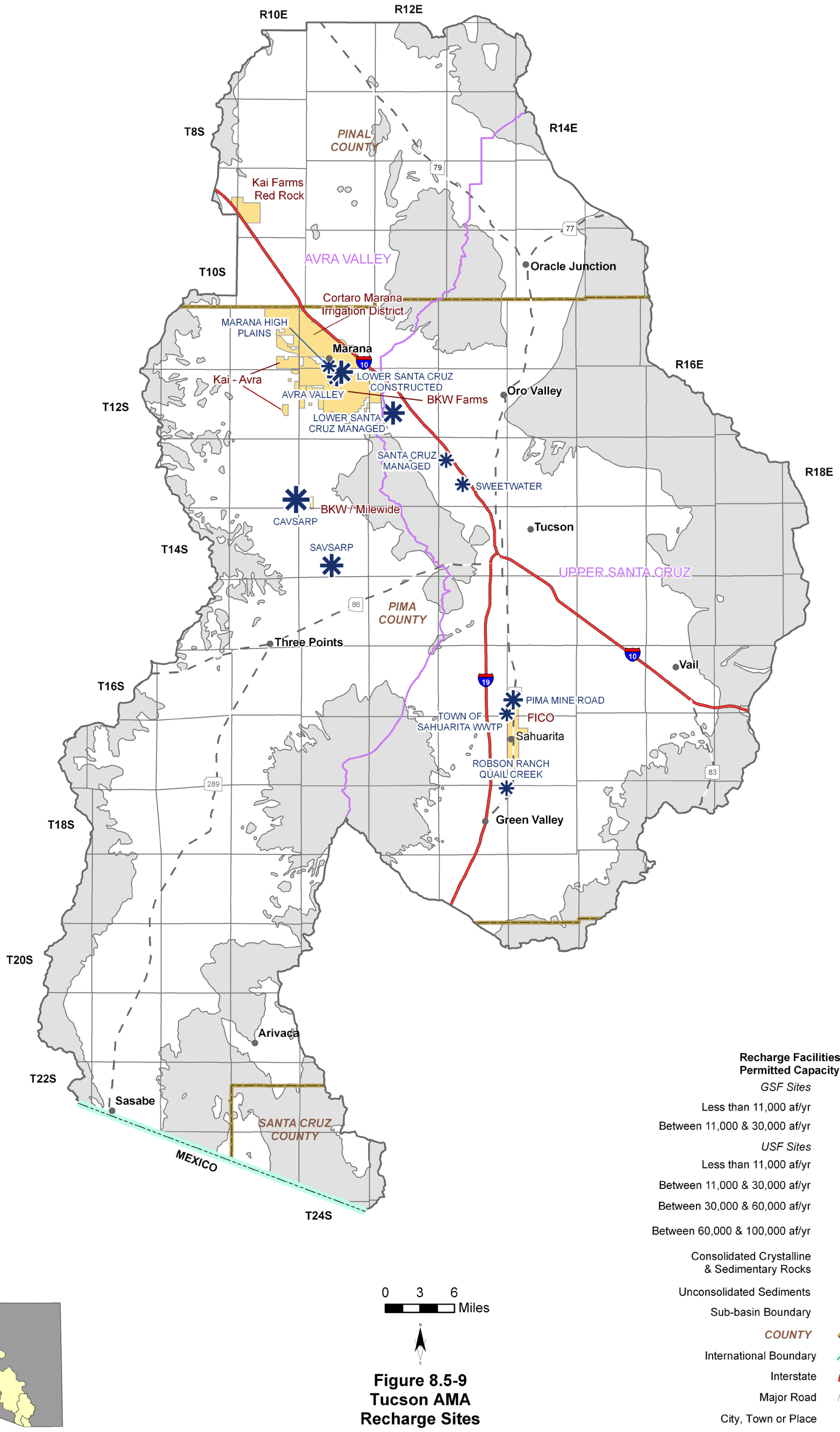


Figure 8.5-9
Tucson AMA
Recharge Sites

8.5.7 Water Quality Exceedences and Contamination Sites in the Tucson AMA

Sites with parameter concentrations that have equaled or exceeded drinking water standard(s) (DWS), including location and parameter(s) are shown in Table 8.5-8A. Impaired lakes and streams with site type, name, length of impaired reach, area of impaired lake, designated use standard and parameter(s) exceeded is shown in Table 8.5-8B. Figure 8.5-10 shows the location of water quality occurrences keyed to Table 8.5-8. Figure 8.5-11 shows the located of contamination sites in the Tucson AMA. A description of water quality data sources and methods is found in Volume 1, Section 1.3.18. All community water systems are regulated under the Safe Drinking Water Act and treat water supplies to meet drinking water standards. Not all parameters were measured at all sites; selective sampling for particular constituents is common.

Well, spring and mine sites that have equaled or exceeded drinking water standards (DWS)

- Refer to Table 8.5-8A.
- Three hundred and seventy-one sites have parameter concentrations that have equaled or exceeded DWS.
- Parameters equaled or exceeded include arsenic, lead, nitrates, fluoride, beryllium, cadmium, organics, mercury, manganese, copper, chromium, zinc, total dissolved solids, radionuclides, selenium and nitrates.

Lakes and Streams with impaired waters

- Refer to Table 8.5-8B.
- Water quality standards were equaled or exceeded in three lakes.
- Arivaca and Rose Canyon Lakes are part of the ADEQ water quality improvement effort called the Total Maximum Daily Load (TMDL) Program. The final TMDL document has been completed for both.

Effluent Dependent Reaches

- Refer to Figure 8.5-10
- A portion of the Santa Cruz River in this AMA is effluent dependent.

Contamination Sites

- Refer to Figure 8.5-11 and Table 8.5-9
- There are 38 Voluntary Remediation Program sites, seven Water Quality Assurance Revolving Fund sites, one active National Priority List site and one Department of Defense site.
- The most common contaminants are Volatile Organic Compounds (VOCs).

Table 8.5-8 Water Quality Exceedences in the Tucson AMA[1]

A. Wells, Springs and Mines

Map Key(s)	Location			Number of Stations	Parameter(s) Concentration has Equaled or Exceeded Drinking Water Standard (DWS)[2]
	Township	Range	Section		
1	7 South	10 East	1	1	As, Pb
2	9 South	10 East	5	1	F
3	9 South	10 East	18	1	As, F
4	9 South	9 East	24	2	NO3
5	9 South	10 East	28	1	As
5	9 South	10 East	29	1	F
6	10 South	11 East	15	1	As
7	10 South	14 East	19	1	Cd
8	10 South	14 East	23	2	Cd
9	10 South	14 East	27	1	Cd
9	10 South	14 East	34	1	Cd
10	11 South	14 East	10	1	Cd, NO3, Pb
10	11 South	14 East	11	1	Pb
11	10 South	10 East	34	3	NO3
12	10 South	10 East	32	1	Be, NO3
13	11 South	11 East	18	1	NO3
13	11 South	11 East	19	1	NO3
14	11 South	10 East	14	1	NO3, Pb
15	11 South	11 East	20	1	Organics
15	11 South	11 East	29	1	As
16	11 South	11 East	21	1	As
17	11 South	13 East	22	1	Mn
18	11 South	10 East	24	2	NO3
19	11 South	11 East	28	1	NO3
20	11 South	9 East	27	1	NO3
21	11 South	11 East	30	1	NO3
22	11 South	11 East	31	1	NO3
23	11 South	11 East	35	2	NO3, Organics
23	12 South	11 East	2	1	NO3
24	12 South	12 East	6	1	NO3
25	12 South	13 East	1	1	Be
26	12 South	14 East	7	1	Be, Cd
27	12 South	12 East	8	1	Organics
28	12 South	13 East	11	1	Be
28	12 South	13 East	15	1	Be
29	12 South	13 East	12	2	Be, Cd
30	12 South	11 East	9	1	NO3
31	12 South	12 East	11	1	F
31	12 South	12 East	13	1	As, F
32	12 South	10 East	9	1	Organics
33	12 South	13 East	13	1	Be
33	12 South	14 East	18	1	Be, Cd
34	12 South	11 East	17	1	NO3
35	12 South	12 East	21	1	Organics
36	12 South	12 East	24	2	Be
36	12 South	12 East	25	1	Organics
36	12 South	12 East	26	1	Organics
37	12 South	11 East	26	1	Cd, NO3
38	12 South	13 East	35	2	Be
38	13 South	13 East	2	1	Mn
39, 41	13 South	13 East	6	2	Be, Mn
40	13 South	11 East	4	1	Pb
42	13 South	13 East	8	2	Cd, NO3
42	13 South	13 East	9	1	NO3
42	13 South	13 East	17	1	Mn
42, 44	13 South	13 East	16	2	Cd, Mn
43	13 South	13 East	20	3	Cd, Cr, Mn, NO3
43	13 South	13 East	21	3	Mn, NO3
43, 46	13 South	13 East	29	3	As, Cd, Cr, Hg, Mn, NO3, Pb, Se
44	13 South	13 East	15	1	F, Mn
45	13 South	13 East	23	1	Organics
46	13 South	13 East	28	11	As, Cd, Cu, Hg, Mn, NO3, Pb, Se

Table 8.5-8 Water Quality Exceedences in the Tucson AMA[1]

A. Wells, Springs and Mines

Map Key(s)	Location			Number of Stations	Parameter(s) Concentration has Equaled or Exceeded Drinking Water Standard (DWS)[2]
	Township	Range	Section		
46	13 South	13 East	33	3	Hg, Mn, NO3
46	13 South	13 East	34	2	Mn, NO3, Pb
47	13 South	14 East	19	1	Organics
47	13 South	14 East	29	1	Be
48	13 South	14 East	28	2	NO3, Organics
48	13 South	14 East	32	2	Be, Mn
49	13 South	11 East	29	1	Pb
50	13 South	13 East	27	2	As, Organics
51	13 South	14 East	26	6	Mn, NO3
51	13 South	14 East	34	1	Pb
52	13 South	16 East	28	1	F
53	14 South	13 East	3	3	Mn, Pb
54	13 South	13 East	26	1	Pb
55	13 South	11 East	31	3	Mn, NO3, Pb
56	14 South	11 East	5	2	Cd, Mn, NO3
56	14 South	11 East	8	2	As
57	13 South	14 East	31	1	As, Mn
58	13 South	14 East	36	1	Mn
58	14 South	14 East	1	1	Be
59	14 South	14 East	2	1	Mn, Pb, Zn
60	14 South	15 East	5	4	Mn, Pb, Zn
60	14 South	15 East	8	7	Cr, Mn, Pb, Se
60	14 South	15 East	17	2	Mn, Pb, Zn
60, 61	14 South	15 East	7	8	Cd, Mn, Organics, Pb, Zn
61	14 South	14 East	11	2	Mn, Pb
61	14 South	14 East	12	2	Mn, Pb
62	14 South	15 East	6	2	Mn
63	14 South	14 East	16	3	Mn, NO3, Pb
64	14 South	14 East	4	4	Cu, Mn, Pb
64	14 South	14 East	5	1	Pb
64	14 South	14 East	8	1	NO3
64	14 South	14 East	9	2	Pb
65	14 South	15 East	4	1	Pb
66	14 South	15 East	11	1	Pb
67	14 South	16 East	6	1	As, Mn, TDS
68	13 South	15 East	32	1	Pb
69	14 South	14 East	21	1	Mn, Pb
69	14 South	14 East	22	1	Pb
70	14 South	13 East	11	1	Mn, NO3
70	14 South	13 East	12	2	Organics
70	14 South	13 East	14	7	As, Mn, NO3, Pb
70	14 South	13 East	23	2	As, F
71	14 South	15 East	15	1	Mn, Pb
71	14 South	15 East	22	1	Pb
72	14 South	14 East	20	1	Cd
73	14 South	14 East	25	1	Mn
74	14 South	12 East	30	1	As
75	14 South	14 East	29	2	As, Mn, Pb
76	14 South	13 East	34	1	NO3
76	14 South	13 East	35	2	Mn, NO3
76	14 South	13 East	36	1	Pb
76	15 South	13 East	1	8	As, Organics
76	15 South	13 East	2	7	As, Mn, Organics
76	15 South	13 East	11	7	As, Organics
76	15 South	14 East	7	1	Organics
76, 83	15 South	13 East	12	11	As, Organics
77	14 South	13 East	25	2	As
77	14 South	14 East	30	1	F
77	14 South	14 East	31	2	NO3
78	14 South	15 East	34	6	Cd, Hg, Mn, Pb, TDS, Zn
78	14 South	15 East	35	1	Pb
78	15 South	15 East	2	4	Mn, Pb

Table 8.5-8 Water Quality Exceedences in the Tucson AMA[1]

A. Wells, Springs and Mines

Map Key(s)	Location			Number of Stations	Parameter(s) Concentration has Equaled or Exceeded Drinking Water Standard (DWS)[2]
	Township	Range	Section		
78	15 South	15 East	3	1	Mn, Pb, Zn
79	14 South	15 East	33	3	Mn
80	15 South	14 East	2	1	Be, Mn
80	15 South	14 East	3	5	Be, Cr, Mn
81	15 South	14 East	4	1	As
81	15 South	14 East	9	1	As, Mn
82	15 South	13 East	10	1	NO3
83	15 South	13 East	13	17	As, F, Mn, Organics
83	15 South	14 East	18	5	As, F, NO3
83	15 South	14 East	19	2	As, Organics
84	15 South	15 East	6	1	NO3
85	15 South	11 East	15	1	Pb
86	15 South	14 East	17	3	As, Organics
87	15 South	13 East	23	1	As
88	15 South	17 East	16	1	Mn
88	15 South	17 East	21	1	F
89	15 South	14 East	13	2	Mn, Pb
89	15 South	14 East	15	2	As, Be
89	15 South	14 East	22	1	As
89	15 South	14 East	23	4	As, Cd, Cr, Mn, Pb, Zn
90	15 South	16 East	18	3	Mn, Pb
91	15 South	16 East	29	1	As, Mn
92	15 South	13 East	26	1	As
92	15 South	13 East	27	3	As, Mn
93	15 South	15 East	29	1	As
94	15 South	10 East	35	1	Cd
95	15 South	10 East	33	1	NO3
96	16 South	10 East	8	3	NO3, TDS
97	15 South	13 East	35	1	As
97	16 South	13 East	2	1	As
98	16 South	15 East	6	1	NO3
98	16 South	15 East	7	1	NO3
99	15 South	14 East	31	2	NO3
99	16 South	14 East	6	5	As, NO3
99, 100	16 South	14 East	7	3	NO3
100	16 South	14 East	17	1	NO3
100	16 South	14 East	18	1	NO3
101	16 South	14 East	20	1	NO3
101	16 South	14 East	21	1	NO3
101	16 South	14 East	28	1	NO3
101	16 South	14 East	29	1	NO3
102	17 South	15 East	6	1	Pb
103	17 South	14 East	6	2	NO3, Organics
104	17 South	14 East	2	1	Pb
105	17 South	14 East	4	1	NO3
106	17 South	10 East	13	2	Mn, Rad
107	17 South	14 East	9	1	NO3
108	17 South	12 East	11	1	NO3
109	17 South	13 East	12	1	As
109	17 South	13 East	13	1	As
109	17 South	13 East	14	1	Mn
109	17 South	14 East	7	1	F
110	17 South	14 East	17	1	NO3
111	17 South	8 East	9	1	Mn
112	17 South	13 East	19	1	As
113	17 South	14 East	21	3	NO3
114	17 South	14 East	22	1	As
115	17 South	13 East	24	1	NO3
115	17 South	13 East	25	1	As
115	17 South	13 East	26	2	NO3, Organics
116	17 South	14 East	19	2	As, F
117	17 South	8 East	19	1	Mn

Table 8.5-8 Water Quality Exceedences in the Tucson AMA[1]

A. Wells, Springs and Mines

Map Key(s)	Location			Number of Stations	Parameter(s) Concentration has Equaled or Exceeded Drinking Water Standard (DWS)[2]
	Township	Range	Section		
118	18 South	13 East	12	1	NO3
119	18 South	13 East	22	1	Organics
119	18 South	13 East	23	1	As
119	18 South	13 East	24	2	NO3
120	18 South	13 East	13	2	NO3, Organics
121	18 South	15 East	22	1	F
122	18 South	15 East	34	1	F
123	19 South	11 East	8	1	As
124	20 South	8 East	35	1	As, F
125	22 South	10 East	15	1	Mn

B. Lakes and Streams

Map Key	Site Type	Site Name	Length of Impaired Stream Reach (in miles)	Area of Impaired Lake (in acres)	Designated Use Standard[3]	Parameter(s) Exceeding Use Standard[2]
a	Lake	Rose Canyon Lake	NA	7.2	A&W, Agl, FBC	pH
b	Lake	Lakeside Lake	NA	15	FC	DO, Ammonia, N, P, Chlorophyll
c	Lake	Arivaca Lake	NA	118	FC	Hg

Notes:

[1] Water quality samples collected between 1975 and 2004.

[2] As = Arsenic
Be = Beryllium
Cd = Cadmium
Cr = Chromium
Cu = Copper
DO = Dissolved Oxygen
F = Fluoride
Hg = Mercury
Mn = Manganese
N = Nitrogen
P = Phosphorus
Pb = Lead
NO3 = Nitrate/ Nitrite
Organics = One or more of several volatile and semi-volatile organic compounds and pesticides
Rad = radionuclides
Se = Selenium
TDS = Total Dissolved Solids
Zn = Zinc

[3] A&W = Aquatic and Wildlife
Agl = Agriculture
FBC = Full Body Contact
FC = Fish Consumption

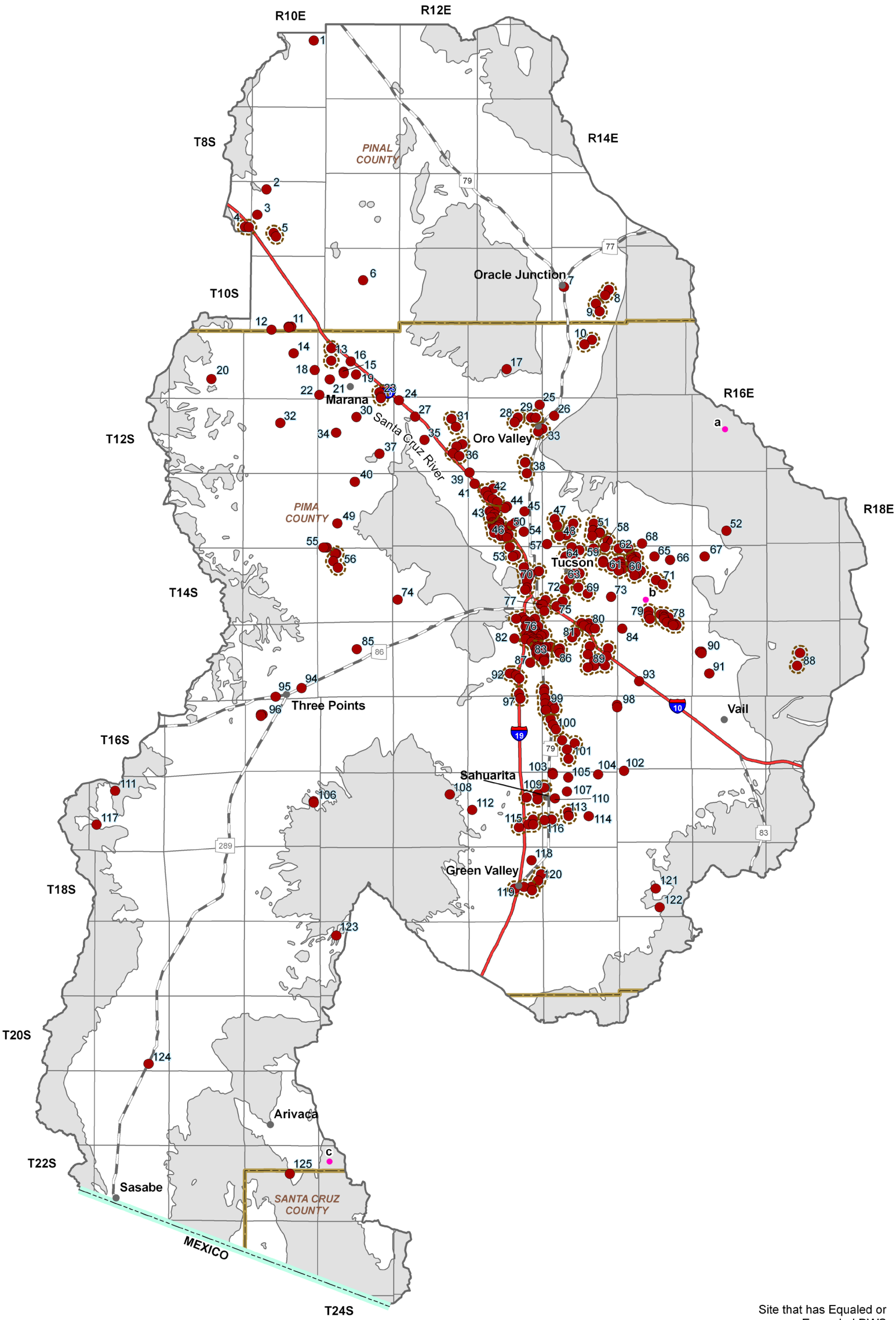


Figure 8.5-10
Tucson AMA
Water Quality Conditions

Table 8.5-9 Contamination Sites in the Tucson AMA

Map Key	SITE NAME	MEDIA AFFECTED AND CONTAMINANT
Voluntary Remediation Sites		
H	35 E. Toole	Soil/Benzene, Toluene, Ethyl benzene, and Xylene (BTEX), and Polycyclic aromatic hydrocarbons (PAHs) Groundwater/To be determined
J	7500 East Broadway	Soil/Tetrachloroethene (PCE) and Trichloroethene (TCE)
O	Ansell Inc.	Groundwater/Chromium
none	AZ Portland Cement Co.	Soil/Benzene, Toluene, Ethyl benzene, and Xylene (BTEX) and Polycyclic aromatic hydrocarbons (PAHs)
S	Former Circle K Store #01046	Soil/Benzene, Toluene, Ethyl benzene, and Xylene (BTEX) and Hydrocarbons
P	HILP Dross	Soil/Aluminum dross
T	Los Reales/Southwest Disposal Area	Soil/Dichloroethene (DCE)
H	Rio Nuevo Landfill Stabilization Project	Soil/To be determined
D	SFFP Silvercroft Wash Release	Soil & Groundwater/Benzene, Toluene, Ethyl benzene, and Xylene (BTEX)
none	Silver Creek II Subdivision	Soil & Groundwater/Benzene, Toluene, Ethyl benzene, and Xylene (BTEX), Methyl Tertiary-butyl ether (MTBE) and Gasoline additives
none	Tucson Compressor Station	Soil & Groundwater/Chromium
K	Union Pacific Railroad 22nd St. Yard	Soil/Diesel fuel
L	Union Pacific Railroad 31st Street	Soil & Groundwater/Diesel fuel
L	Union Pacific Railroad 34th Street	Soil & Groundwater/Diesel fuel
L	Union Pacific Railroad 36th Street	Soil/Total Petroleum Hydrocarbons (TPH), Benzene, Toluene, Ethyl benzene, and Xylene (BTEX), Polycyclic aromatic hydrocarbons (PAHs) and Benzene

Table 8.5-9 Contamination Sites in the Tucson AMA (cont)

MAP KEY	SITE NAME	MEDIA AFFECTED AND CONTAMINANT
Water Quality Assurance Revolving Fund (WQARF) Sites		
E	7th Street and Arizona Avenue	Groundwater/Tetrachloroethene (PCE), Trichloroethene (TCE) and Dichloroethene (DCE)
G	Broadway-Pantano	Groundwater/Tetrachloroethene (PCE), Trichloroethene (TCE), and Vinyl chloride
R	Los Reales Landfill	Groundwater/Tetrachloroethene (PCE) and Trichloroethene (TCE)
B	Miracle Mile	Groundwater/Trichloroethene (TCE) and Chromium
F	Park-Euclid	Groundwater/Tetrachloroethene (PCE), Trichloroethene (TCE) and Dichloroethene (DCE)
A	Shannon Road El Camino de Cerro	Soil/Lead Groundwater/Tetrachloroethene (PCE), trichloroethene (TCE), Dichloroethene (DCE), Vinyl chloride and Benzene
C	Silverbell Jail Annex Landfill	Groundwater/Tetrachloroethene (PCE), Trichloroethene (TCE), Dichloroethene (DCE) and Vinyl chloride
National Priority List (NPL) Superfund Sites		
Q	Tucson International Airport Area[1]	Soil/Polychlorinated biphenyls (PCBs) and Metals Groundwater/Trichloroethene (TCE), Dichloroethene (DCE), Chloroform and Chromium
Department of Defense (DOD) Sites		
N	Davis-Monthan Air Force Base	Soil/Petroleum hydrocarbons, Benzene, Toluene, Ethyl benzene, and Xylene (BTEX), Methane gas, Volatile Organic Compounds (VOCs) and Metals

Table 8.5-9 Contamination Sites in the Tucson AMA (cont)

MAP KEY	SITE NAME	MEDIA AFFECTED AND CONTAMINANT
Resource Conservation and Remediation Act Sites		
U	Hughes/Raytheon/USAF	Groundwater & Soil/Volatile Organic Compounds (VOCs), Metals
M	Kinder Morgan	Groundwater/Petroleum

Sources: ADEQ 2002, ADEQ 2006a, ADEQ 2006b

[1] Tucson International Airport Area Site includes: Air Force Plant 44 (AFP-44)/Raytheon Project Area, Airport Property Project Area, Arizona Air National Guard (AANG) 162nd Project Area, Texas Instruments (formerly Burr-Brown) Project Area, Tucson Airport Remediation Project (TARP), West-Cap Project Area and West Plume B Project Area

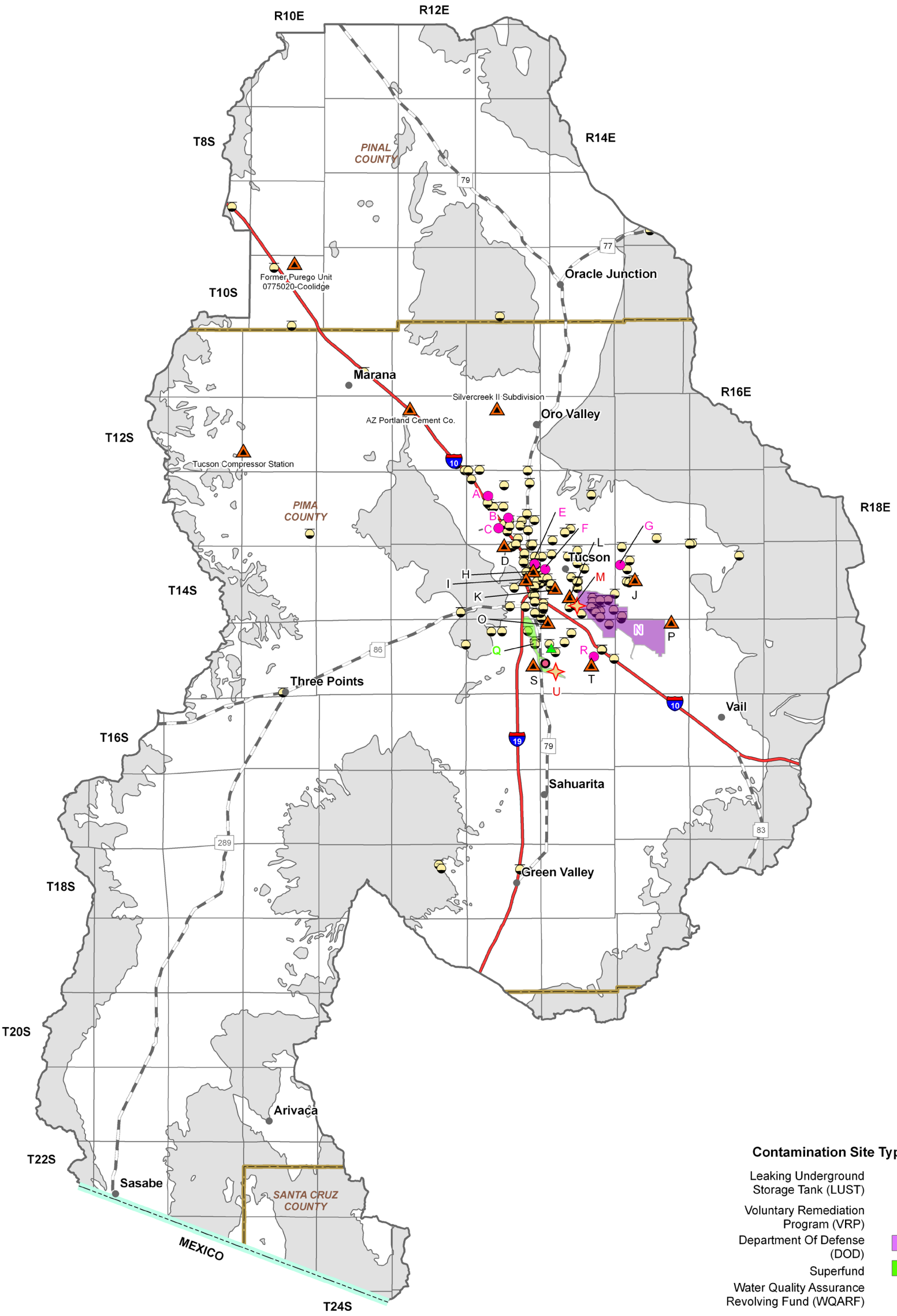


Figure 8.5-11
Tucson AMA
Contamination Sites

8.5.8 Cultural Water Demands in the Tucson AMA

Cultural water demand data including population, number of wells and the average well pumpage and non-groundwater use by the municipal, industrial and agricultural sectors are shown in Table 8.5-10. Effluent generation including facility ownership, location, population served and not served, volume treated, disposal method and treatment level is shown in Table 8.5-11. Figure 8.5-12 shows the location of demand centers. A description of cultural water demand data sources and methods is found in Volume 1, Section 1.3.5. More detailed information on cultural water demands is found in Section 8.0.7.

Cultural Water Demands

- Refer to Table 8.5-10 and Figure 8.5-12.
- Population increased from 518,438 in 1980 to 853,423 in 2000 and projections suggest an increase to over 1.7 million residents by 2050.
- Industrial water demand has and continues to be met almost exclusively by groundwater supplies. The major industrial users in the AMA are metal mines. In 2003 metal mines accounted for approximately 57% of the AMA's total industrial water demand.
- Municipal water demand is the major demand sector and is steadily growing, however; much of that growth is being offset with non-groundwater sources. The 1991-1995 average annual non-groundwater use in the municipal sector reflects direct delivery of CAP water. The 2001-2003 non-groundwater average annual use reflects CAP use through recharge and recovery. Effluent is also used to meet municipal demand.
- Agricultural demand accounts for approximately 30% of the water demand in the AMA.
- As of 2003 there were 6,443 registered wells with a pumping capacity of less than or equal to 35 gallons per minute and 4,930 wells with a pumping capacity of more than 35 gallons per minute.

Effluent Generation

- Refer to Table 8.5-11.
- 24 wastewater treatment facilities were identified in the AMA.
- A variety of effluent disposal methods are used in the AMA, with the majority of effluent discharged into the Santa Cruz River, stored at permitted recharge projects and used for golf course irrigation.
- More than 74,000 acre-feet of effluent is treated/generated annually in the AMA.

Table 8.4-10 Cultural Water Demands in the Tucson AMA[1]

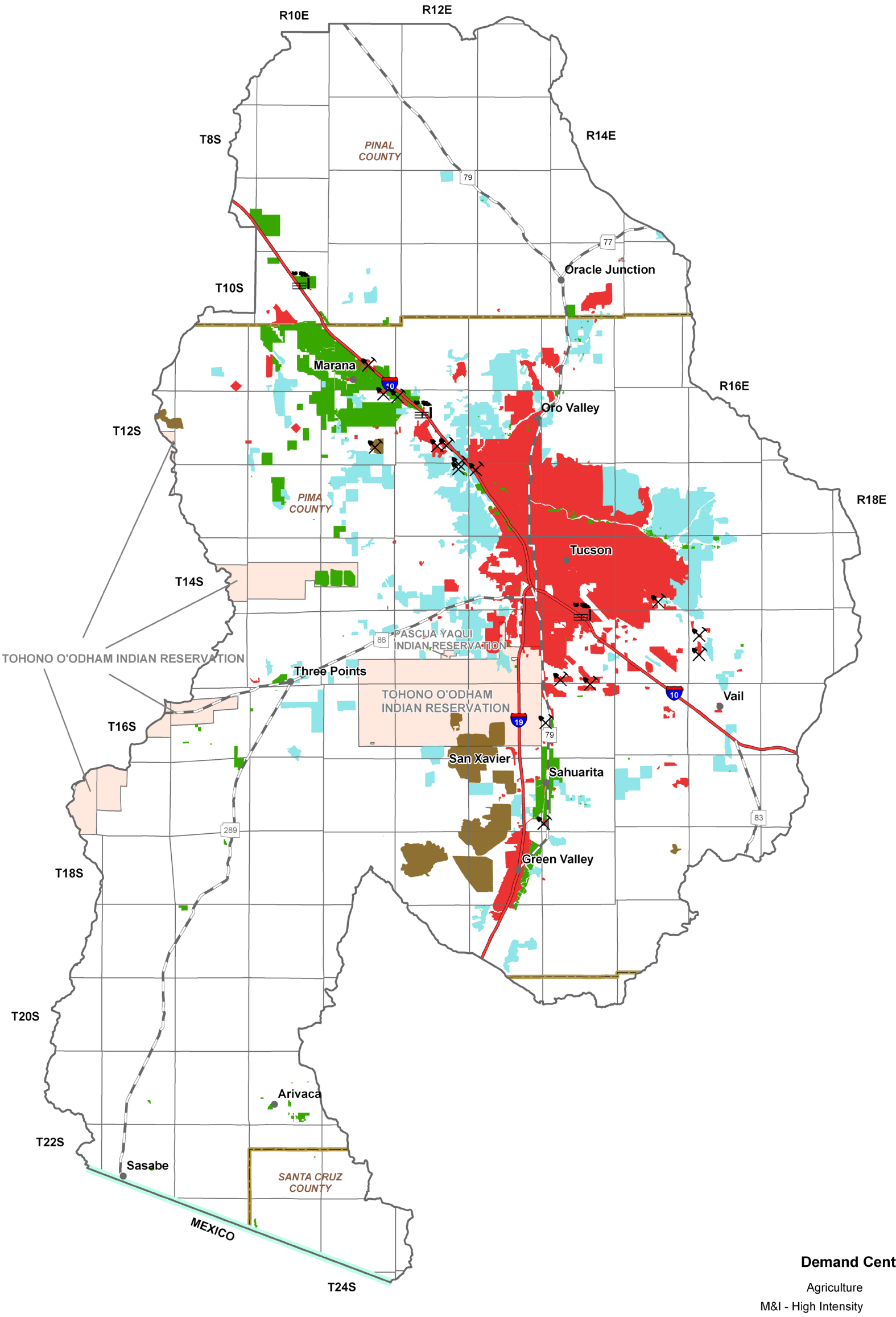
Year	Recent (Census) and Projected (DES) Population	Number of Registered Water Supply Wells Drilled		Average Annual Demand (in acre-feet)[2]						Data Source
				Well Pumpage			Non-Groundwater[3]			
		Q ≤ 35 gpm	Q > 35 gpm	Municipal	Industrial	Irrigation[4]	Municipal	Industrial	Irrigation[4]	
1971		3,240[5]	1,769[5]	409,000			<1,000			ADWR[6] (1994)
1972										
1973										
1974										
1975										
1976				329,000			<1,000			
1977										
1978										
1979										
1980	518,438									
1981	532,131	485	268	264,000			<1,000			
1982	545,824									
1983	559,517									
1984	573,211									
1985	579,444									
1986	605,842	422	621	274,400			6,600			ADWR (2008)
1987	633,324									
1988	641,562									
1989	652,891									
1990	660,709									
1991	668,402	554	876	122,300	60,900	85,000	20,100	60	5,700	
1992	688,855									
1993	708,890									
1994	743,184									
1995	773,665									
1996	777,907	979	944	157,800	62,800	82,300	9,100	100	24,900	
1997	809,509									
1998	831,094									
1999	840,584									
2000	853,423									
2001	867,088	763	452	141,800	52,000	76,600	40,400	700	27,800	
2002	888,724									
2003	921,607									
2010	1,064,619									
2020	1,270,256									
2030	1,445,641									
2040	1,594,100									
2050	1,722,121									
ADDITIONAL WELLS:[7]		**55**	**0**							
WELL TOTALS:		**6,498**	**4,930**							

Notes:
NR = Not reported.
[1] Does not include evaporation losses from stockponds and reservoirs.
[2] Includes Indian Demand
[3] Non-Groundwater supplies may include surface water, CAP, effluent, spill water or tail water.
[4] Agricultural demand does not include small exempt use after 1993.
[5] Includes all wells through 1980.
[6] Water demand from 1971-1985 includes demand from the Santa Cruz AMA.
[7] Other water-supply wells are listed in the ADWR Well Registry for this basin, but they do not have completion dates. These wells are summed here.

Table 8.5-11 Effluent Generation in the Tucson AMA

Facility Name	Ownership	City/Location Served	Population Served	Volume Treated/Generated (acre-feet)	Disposal Method									Current Treatment Level	Population Not Served	Year of Record
					Water - course	Evaporation Pond	Irrigation	Golf Course	Wildlife Area	Discharged to Another Facility	Infiltration Basin	Industrial Reuse	Other			
Adonis Mobile Home Park	Adonis MHP HOA	Marana	NA	NA	NA									NA	NA	NA
Arizona-Sonoran Desert Museum WWTF	Pima County	Tucson	NA	NA	NA									NA	NA	NA
ASPC - Tucson WWTF	Arizona Department of Corrections	Tucson	2,086	504						X				Secondary	36	2004
Avra Valley WWTF	Pima County	Avra Valley	10,600	1,120	X	X	X				X			Advanced Treatment I with Nutrient Removal	NA	2004
Biosphere 2 Center	University of Arizona	Oracle	NA	NA	NA									NA	NA	NA
Corona De Tucson WWTF	Pima County	Corona De Tucson	765	72		X								Secondary	NA	2003
Green Valley WWTF	Pima County	Green Valley	18,000	1,904			X				P	X		Secondary	NA	2004
Ina Road WPCF	Pima County	Tucson	217,888	34,723	P			X			P			Advanced Treatment I with Nutrient Removal	NA	2004
Marana Community Correctional Facility	Management Training Corporation	Marana	NA	NA	NA									NA	NA	NA
Marana High School	Marana Unified School District	Marana	NA	NA	NA									NA	NA	NA
Marana WWTF	Pima County	Marana	2,600	56	X							X		Secondary	5,000	2004
Milagro Subdivision	Milagro HOA	Tucson	50	NA			X						X	NA	NA	NA
Mt. Lemmon WWTP	Pima County	Summerhaven	NA	2			X							Secondary	NA	NA
Pima County Fair Grounds	Pima County	Tucson	NA	NA		X					X			NA	NA	NA
Pinal Air Park	Evergreen International Aviation	Evergreen Air Center	NA	NA	NA									NA	NA	NA
Randolph Park WRF	Pima County	Tucson	30,000	3,360				X				X		Advanced Treatment I with Nutrient Removal	NA	2004
Red Rock Village WWTF	NA	Red Rock	NA	NA	NA									NA	NA	NA
Rillito Vista WWTF	Pima County	Tucson	156	11		X					X			NA	NA	2,002
Roger Rd WWTP	City of Tucson	Tucson	277,000	32,483	P			X	X		P			Advanced Treatment I	NA	2004
Saddlebrooke Utility - WWTF	Saddlebrooke Utility Company	Saddlebrooke	NA	NA	NA									NA	NA	NA
Sahuarita High School Wetlands	Sahuarita School District	Sahuarita	NA	NA					X					NA	NA	NA
Sahuarita WWTF	Pima County	Sahuarita	2,380	NA							P			Treatment 1 with Nutrient Removal	NA	2,005
U of A Science & Tech Park	University of Arizona	Tucson	NA	NA								X		NA	NA	NA
U.S.F.S. Palisades Ranger Station	United States Forest Service	Tucson	NA	NA		X	X							NA	NA	NA
Total			**561,525**	**74,235**												

Sources: Clean Water Needs Survey (CWNS) 2002 and 2004 Data, The Pima Effluent Generation and Utilization Report (2004), Pima Association of Government's (PAG's) Section 208 Areawide Water Quality Management Plan (2006), AZURITE (2008)
P=Permitted Underground Recharge Facility
NA=not available
WWTF=Wastewater Treatment Facility
WPCF=Water Pollution Control Facility
WWTP=Wastewater Treatment Plant
WRF=Wastewater Reclamation Facility



Primary Data Source: USGS National Gap Analysis Program, 2004

Figure 8.5-12
Tucson AMA
Cultural Water Demand

8.5.9 Assured Water Supply Determinations in the Tucson AMA

Assured water supply determination information including the subdivision name, location, number of lots, date of determination, subdivision water provider and Central Arizona Groundwater Replenishment District (CAGRD) membership status are shown in Table 8.5-12A, B and C for certificates, water adequacy reports and analysis of assured water supply. Designated water provider information is shown in Table 8.5-12D with date of application, date the designation was issued and projected or annual estimated demand. Figure 8.5-13 shows the general locations of subdivisions (to the section level) and designated provider water service areas keyed to the Table. A description of the Assured Water Supply Program is found Section 8.0.5 and in Volume 1, Appendix A. Assured Water Supply determination data sources and methods are found in Volume 1, Sections 1.3.1.

Water Supply Records

- See Table 8.5-12
- As of February 2008, 336 subdivisions with a total of 137,938 lots have been reviewed for an assured water supply determination. 93% of the determinations were in Pima County.
- 44,366 lots in 230 subdivisions received a Certificate of Assured Water Supply, 11,467 lots in 90 subdivisions received Water Adequacy Reports and 82,105 lots in 16 developments received an Analyses of Assured Water Supply.
- Of the 230 subdivisions with a Certificate of Assured Water Supply, 73 are CAGRD members.
- There are nine designated providers with a total projected or estimated annual water use of 231,706 acre-feet.

Table 8.5-12 Assured Water Supply Determinations in the Tucson AMA[1]

A. Certificates of Assured Water Supply

Map Key	Subdivision Name	County	Location			No. of Lots	ADWR File No.	Date of Determination	Water Provider at the Time of Application	GRD Member
			Township	Range	Section					
2	SaddleBrooke Ranch	Pinal	9 South	14 East	32	5,619	27-400761	02/06/03	Arizona Water Co - SaddleBrooke	Y
4	Coronado Ridge	Pinal	9 South	15 East	33 & 34	60	27-300280	12/10/97	Arizona Water Company - Oracle System	N
5	Red Rock Village IIA (formerly known as 'Red Rock Village 1 Model Complex')	Pinal	10 South	10 East	8	20	27-402062	09/11/06	Red Rock Utilities	Y
5	Red Rock Village 1	Pinal	10 South	10 East	8	453	27-402063	09/11/06	Red Rock Utilities	Y
5	Red Rock Village 2	Pinal	10 South	10 East	5, 8 & 9	552	27-402064	03/09/07	Red Rock Utilities	Y
7	Red Rock Village IV	Pinal	10 South	10 East	8	105	27-700237	07/20/07	Red Rock Utilities	Y
7	Red Rock Village III	Pinal	10 South	10 East	8	87	27-700362	01/14/08	Red Rock Utilities	Y
7	Red Rock Village V	Pinal	10 South	10 East	8	116	27-700363	01/07/08	Red Rock Utilities	Y
8	Desert Living Estates	Pinal	10 South	11 East	30	60	27-401392	12/09/05	NA	N
9	Saddlebrooke #14, 15, 17 expansion	Pinal	10 South	14 East	23	452	27-200300	07/18/94	Lago del Oro Water Company	N
9	SaddleBrooke Unit 51, Lots 1-7	Pinal	10 South	14 East	23	7	27-401753	10/07/05	Lago del Oro Water Company	Y
10	Eagle Crest Ranch	Pinal	10 South	14 East	32	975	27-200109	05/25/90	NA	N
11	Saddlebrooke Units 46-50	Pinal	10 South	14 East	33	770	27-400552	11/15/01	Lago del Oro Water Company	N
11	SaddleBrooke Unit 48 A	Pinal	10 South	14 East	33	5	27-401043	03/24/04	Lago del Oro Water Company	N
12	Saddlebrooke Units 42-45	Pima	10 South	14 East	13, 23-25	525	27-400478	06/03/02	NA	Y
13	Saddlebrooke #5-20	Pinal	10 South	14 East	22, 23, 26, 27 & 35	2095	27-200305	05/09/89	Lago del Oro Water Company	N
14	Saddlebrooke #4	Pinal	10 South	14 East	23, 26 & 27	383	27-200304	02/02/89	Lago del Oro Water Company	N
15	Saddlebrooke Unit 21	Pinal	10 South	14 East	25 & 26	215	27-400413	10/24/01	NA	Y
16	Saddlebrooke #1	Pinal	10 South	14 East	26 & 27	165	27-200299	02/27/87	Lago del Oro Water Company	N
16	Saddlebrooke #2	Pinal	10 South	14 East	26 & 27	130	27-200301	10/22/87	Lago del Oro Water Company	N
16	Saddlebrooke #3	Pinal	10 South	14 East	26 & 27	221	27-200303	03/09/88	Lago del Oro Water Company	N
17	Saddlebrooke #22-36, Phase II	Pinal	10 South	14 East	27, 28, 33 & 34	1647	27-200302	04/27/95	Lago del Oro Water Company	N
20	Coronado Reserve Lots 1-260 (excluding lots 86-88, 90-95, 97-105)	Pinal	10 South	15 East	2 & 3	242	27-401640	09/23/05	Arizona Water Company - Oracle System	Y
22	Copper Hill Estates	Pinal	10 South	15 East	5 & 6	61	27-401208	10/19/04	Arizona Water Company - Oracle System	Y
23	White Farms	Pima	11 South	11 East	18	NA	27-200405	11/15/84	NA	N
23	White Farms	Pima	11 South	11 East	18	235	27-200406	03/11/86	NA	N
24	La Mirage Estates	Pima	11 South	11 East	26	510	27-200162	11/16/94	NA	N
24	Tucnix Industrial Park	Pima	11 South	11 East	22	6	27-200360	12/02/81	NA	N
25	Unnamed property, Pima Co.	Pima	11 South	11 East	27	4	27-200368	04/19/84	NA	N
26	Marana Gardens	Pima	11 South	11 East	28	46	27-200193	05/25/89	NA	N
27	The Estate Lots at Tortolita Preserve by Garden Es	Pima	11 South	12 East	26	26	27-400982	01/08/04	Tortollita Water Co.	N
28	Mountain Vista Estates	Pima	11 South	14 East	2	38	27-200202	08/04/82	Lago del Oro Water Company	N
29	Sanmaniego Estates	Pima	11 South	14 East	3	20	27-299998	10/22/81	Lago del Oro Water Company	Y
30	Twin Lakes Lots 1-35	Pima	11 South	14 East	9	35	27-200361	05/05/81	Lago del Oro Water Company	N
30	Twin Lakes Lots 114-144	Pima	11 South	14 East	9	31	27-200362	08/05/94	Lago del Oro Water Company	N
30	Twin Lakes Lots 149-162	Pima	11 South	14 East	9	14	27-200363	11/17/82	Lago del Oro Water Company	N
30	Twin Lakes Lots 163-193	Pima	11 South	14 East	9	33	27-200364	04/21/89	Lago del Oro Water Company	N
30	Twin Lakes Lots 194-231	Pima	11 South	14 East	9	38	27-200365	03/09/90	Lago del Oro Water Company	N
30	Twin Lakes Lots 232-254	Pima	11 South	14 East	9	23	27-300307	07/14/97	Lago del Oro Water Company	N
31	Garden of Eden, Lots 1-18	Pima	11 South	14 East	10	18	27-300044	12/22/95	Lago del Oro Water Company	N
32	Chaparral Estates #2	Pima	11 South	14 East	15	2	27-200050	11/28/80	Los Cerros Water Co	N

Table 8.5-12 Assured Water Supply Determinations in the Tucson AMA[1]

A. Certificates of Assured Water Supply

Map Key	Subdivision Name	County	Location			No. of Lots	ADWR File No.	Date of Determination	Water Provider at the Time of Application	GRD Member
			Township	Range	Section					
33	Black Horse	Pima	11 South	14 East	15 & 16	414	27-400705	11/05/02	Los Cerros Water Co	N
34	Arcadia, Lots 1-40 (Phase I) & Lots 41-190 (Phase II) and Common Areas A & B	Pima	11 South	14 East	3 & 10	190	27-402109	11/17/06	Lago del Oro Water Company	Y
35	Avra Vista 1-64	Pima	12 South	10 East	15	64	27-401073	12/15/03	Metropolitan Domestic Water Improvement District	Y
36	Tierra Linda	Pima	12 South	11 East	29	44	27-200350	06/16/95	NA	N
36	Tierra Linda Nueva	Pima	12 South	11 East	29	199	27-401063	09/09/04	NA	Y
37	Rancho Del Rio Estates, Lots 1-185 and Common Areas A & B	Pima	12 South	11 East	33	185	27-401968	07/05/06	Avra Water Co-op	Y
38	Vista del Sol, Lots 1-15 and Common Area "A"	Pima	12 South	11 East	34	15	27-402258	02/08/08	Avra Water Co-op	Y
42	Shannon Acres	Pima	12 South	13 East	4	8	27-200313	05/11/95	NA	N
56	Tucson Avra West Lots 1-168	Pima	13 South	10 East	15	164	27-300234	03/12/97	Anway Manville LLL Water Co	N
56	Tucson Avra West II, Lots 1-8	Pima	13 South	10 East	15	8	27-400470	06/28/01	Anway Manville LLL Water Co	N
56	Tucson Avra West III, Lots 1-71 & Block A	Pima	13 South	10 East	15	71	27-400981	10/14/03	Anway Manville LLL Water Co	N
57	Rancho Tierra Blanca	Pima	13 South	10 East	21		27-200283	06/11/86	NA	N
58	Desert View Estates	Pima	13 South	11 East	1		27-200102	07/24/84	Avra Water Co-op	N
59	Picture Rocks West	Pima	13 South	11 East	3	65	27-200229	11/22/94	Avra Water Co-op	N
60	Howrey	Pima	13 South	11 East	8	6	27-200146	04/29/85	NA	N
61	Montanas Del Sol, Lots 1-48 and Common Areas "A" & "B"	Pima	13 South	11 East	1 & 12	48	27-700264	12/06/07	Avra Water Co-op	Y
64	Sweetwater Canyon, Lots 1-46 and Common Areas A & B	Pima	13 South	12 East	25	46	27-500012	04/26/07	Lazy C Water Service	Y
71	Brookwood	Pima	13 South	13 East	22	36	27-200014	04/07/91	Flowing Wells Irrigation District	N
71	Trails West Resort	Pima	13 South	13 East	22	117	27-200354	11/17/82	Flowing Wells Irrigation District	N
71	Westbrooke	Pima	13 South	13 East	22	61	27-200400	05/23/94	Flowing Wells Irrigation District	N
71	Sagewood	Pima	13 South	13 East	22	58	27-400348	10/05/00	Flowing Wells Irrigation District	N
72	Roger Square Townhomes	Pima	13 South	13 East	26	10	27-300366	01/16/98	Flowing Wells Irrigation District	N
73	Kilburn Terrace Condominiums, Units 1101, 1102, 1103, 2101, 2102, 2103 & 2104	Pima	13 South	13 East	27	7	27-402050	06/23/06	Flowing Wells Irrigation District	Y
73	Kilburn Place Condominiums, Units 1101, 1102, 1103, 2101, 2102, 2103 & 2104	Pima	13 South	13 East	27	7	27-402057	06/23/06	Flowing Wells Irrigation District	Y
73	Kilburn Manor Condominiums, Units 1101,1102,1103,2101,2102,2103 and 2104	Pima	13 South	13 East	27	7	27-402118	10/04/06	Flowing Wells Irrigation District	Y
73	Kilburn View Condominiums, Units 1101,1102,1103,2101,2102,2103 and 2104	Pima	13 South	13 East	27	7	27-402119	09/21/06	Flowing Wells Irrigation District	Y
75	Shamrock Center Block 1, Lots 1-16 and Common Areas A & B	Pima	13 South	13 East	15 & 22	16	27-401639	01/30/06	Flowing Wells Irrigation District	Y
76	Canyon Ranch Hacienda Lifeshar	Pima	13 South	15 East	21	8	27-200021	12/04/84	Hub Water Company	N
76	Casa del Oso	Pima	13 South	15 East	21	6	27-200041	10/10/89	Hub Water Company	N
77	Villas at Sabino Canyon, The	Pima	13 South	15 East	22	122	27-200383	06/12/87	NA	N
79	Hacienda del Joven Estates	Pima	13 South	15 East	28	40	27-200135	12/08/88	Hub Water Company	N
79	Canyon Ranch Estates II	Pima	13 South	15 East	28	20	27-400666	06/10/02	Hub Water Company	N
80	Sabino Creek	Pima	13 South	15 East	29	98	27-200296	06/18/92	Hub Water Company	N
80	Mountain Cove Estates	Pima	13 South	15 East	29	18	27-300016	11/10/95	Hub Water Company	N
81	Riverbend-Sabino Canyon Road	Pima	13 South	15 East	30	97	27-200290	12/07/81	Hub Water Company	N
82	Desert Anchors	Pima	13 South	15 East	32		27-200090	11/24/80	NA	N
82	Estates at River Ranch	Pima	13 South	15 East	32	78	27-200116	10/17/88	NA	N
82	Villa del Rio	Pima	13 South	15 East	32		27-200377	02/06/78	NA	N
82	Villages at Rancho del Rio	Pima	13 South	15 East	32	65	27-200381	06/13/85	NA	N
82	Villages at Rancho del Rio,#2	Pima	13 South	15 East	32	68	27-200382	05/08/87	NA	N
82	Vista del Rio	Pima	13 South	15 East	32	10	27-200390	12/15/80	NA	N

Table 8.5-12 Assured Water Supply Determinations in the Tucson AMA[1]

A. Certificates of Assured Water Supply

Map Key	Subdivision Name	County	Location			No. of Lots	ADWR File No.	Date of Determination	Water Provider at the Time of Application	GRD Member
			Township	Range	Section					
82	Vista del Rio	Pima	13 South	15 East	32	73	27-200391	03/24/94	NA	N
82	Vista del Rio #2	Pima	13 South	15 East	32	16	27-200392	12/23/80	NA	N
83	Sabino Terrace #2	Pima	13 South	15 East	20 & 21	290	27-200297	01/10/83	Hub Water Company	N
84	Sabino Vista Hills #4	Pima	13 South	15 East	21 & 28	18	27-200298	08/21/86	Hub Water Company	N
85	Canyon Ranch Casitas	Pima	13 South	15 East	21, 22 & 28	56	27-200019	09/26/95	Hub Water Company	N
85	Canyon Ranch Estates	Pima	13 South	15 East	21, 22 & 28	166	27-200020	02/11/82	Hub Water Company	N
88	Ranchita Avra	Pima	14 South	11 East	9	39	27-200274	10/10/80	NA	N
88	Ranchita Avra	Pima	14 South	11 East	9	60	27-200275	03/11/87	NA	N
90	Copper Crest	Pima	14 South	12 East	28	126	27-200078	01/02/87	NA	N
91	Millstone Manor #6	Pima	14 South	12 East	30		27-200199	05/08/85	NA	N
92	R.B. Rumney Ranch	Pima	14 South	12 East	33	11	27-200271	05/08/85	NA	N
92	San Joaquin Oeste	Pima	14 South	12 East	33	48	27-200308	06/18/82	NA	N
92	San Joaquin Oeste	Pima	14 South	12 East	33	78	27-200309	01/18/86	NA	N
93	Tierra Bonita #2	Pima	14 South	12 East	34	66	27-200345	01/10/84	NA	N
93	Tierra Bonita #3	Pima	14 South	12 East	34	38	27-200346	07/05/83	NA	N
94	Kolb Executive Park Condos	Pima	14 South	15 East	5	118	27-200158	03/20/81	NA	N
94	Tanque Verde Estates	Pima	14 South	15 East	5	331	27-200342	10/17/80	NA	N
96	Halcyon Highlands Estates	Pima	14 South	15 East	15	13	27-200136	09/08/83	Halcyon Acres Annex No. 2	N
96	Presidio Trail, Lots 1-50 & Common Areas "A-1" - "A-5" & "B-1"	Pima	14 South	15 East	15	50	27-402074	10/02/06	Halcyon Acres Annex No. 2	Y
96	Camino Seco Village, Lots 1-35 & Common Areas A & B	Pima	14 South	15 East	15	35	27-402098	08/17/06	Halcyon Acres Annex No. 2	Y
98	Voyager Homes Phase "C", Lots 158-235	Pima	14 South	15 East	29	78	27-300359	02/04/98	Voyager Water Company	N
99	Rancho La Linda	Pima	14 South	15 East	36	36	27-200277	08/25/80	NA	N
100	Kolb Executive Park	Pima	14 South	15 East	5 & 6		27-200157	11/10/80	NA	N
101	Forty Niners Country Club Estates II,The	Pima	14 South	16 East	5	17	27-300263	06/03/97	Forty-Niner Water Company	N
102	Robles Junction, 11 Parcels	Pima	15 South	10 East	20, 21, 28 & 29	11	27-200291	08/12/83	NA	N
103	Eagle Point Estates	Pima	15 South	12 East	8	273	27-400664	04/17/02	Diablo Village Water Co	Y
103	Sonoran Ranch Estates II, Lots 1-578 and Common Areas A and B	Pima	15 South	12 East	8	578	27-401525	02/10/05	Diablo Village Water Co	Y
103	Sonoran Ranch Estates II, Lots 1-572 & Common Areas A & B	Pima	15 South	12 East	8	572	27-401812	10/06/05	Diablo Village Water Co	Y
104	Tucson Mountain Ranch, Lots 1-50	Pima	15 South	12 East	9	50	27-400332	10/05/00	Diablo Village Water Co	N
104	Tucson Mountain Ranch, Lots 51-182	Pima	15 South	12 East	9	132	27-400442	03/03/01	Diablo Village Water Co	N
104	Tucson Mountain Ranch Phase 1	Pima	15 South	12 East	9	50	27-400503	06/21/01	Diablo Village Water Co	N
105	Caddis Haley Estates	Pima	15 South	12 East	16	161	27-401269	08/30/04	Diablo Village Water Co	Y
105	Diablo Village Estates Townhouses, Lots 1-59	Pima	15 South	12 East	16	59	27-401520	02/22/05	Diablo Village Water Co	Y
105	Diablo Village Estates, Lots 115-178, 209-222 & 254-511	Pima	15 South	12 East	16	336	27-401606	08/15/05	Diablo Village Water Co	Y
106	Sonoran Ranch Estates	Pima	15 South	12 East	17	214	27-400971	12/10/03	Diablo Village Water Co	N
106	Sonoran Ranch Villages	Pima	15 South	12 East	17	110	27-400994	12/10/03	Diablo Village Water Co	N
108	Drexel Manor	Pima	15 South	14 East	4	140	27-400841	04/16/03	Ray Water Company	Y
108	Drexel Manor	Pima	15 South	14 East	4	137	27-401181	05/19/04	Ray Water Company	Y
109	Silver Moon Estates	Pima	15 South	14 East	10	40	27-300163	05/26/98	Ray Water Company	N
109	Desert Vista Estates	Pima	15 South	14 East	10	157	27-300361	12/01/97	Ray Water Company	N
109	Silvermoon Estates	Pima	15 South	14 East	10	40	27-400467	03/02/01	Ray Water Company	N

Table 8.5-12 Assured Water Supply Determinations in the Tucson AMA[1]

A. Certificates of Assured Water Supply

Map Key	Subdivision Name	County	Location			No. of Lots	ADWR File No.	Date of Determination	Water Provider at the Time of Application	GRD Member
			Township	Range	Section					
109	Desert Vista Terrace	Pima	15 South	14 East	10	183	27-400777	11/04/02	Ray Water Company	N
109	Desert Point Estates, Lots 1-76	Pima	15 South	14 East	10	76	27-401319	12/02/04	Ray Water Company	Y
109	Cantera, an RCP Subdivision, Lots 1-143; Common Areas A, B & C; Blocks A & B	Pima	15 South	14 East	10	143	27-401727	11/15/05	Ray Water Company	Y
109	Desert Point 2, Lots 1 - 45 and Common Areas "A" & "B"	Pima	15 South	14 East	10	45	27-402265	03/30/07	Ray Water Company	Y
109	Desert View Plaza, Lots 1-7	Pima	15 South	14 East	10	7	27-500022	05/30/07	Ray Water Company	Y
110	Voyager Homes	Pima	15 South	15 East	29	85	27-200393	04/03/95	Voyager Water Company	N
110	Voyager Homes Phase "B", Lots 86-157	Pima	15 South	15 East	29	72	27-300185	09/22/96	Voyager Water Company	N
110	Voyager Homes Phase "D", Lots 232-289	Pima	15 South	15 East	29	58	27-400491	04/10/01	Voyager Water Company	N
111	Sycamore Park, Villages 1 thru 7 C.A. "A", "B", "C" & "D"	Pima	15 South	15 East	32	733	27-401414	03/03/05	Voyager Water Company	Y
112	Thunderhead Ranch	Pima	15 South	16 East	8	116	27-200344	07/10/80	NA	N
115	Bluff Creek, Lots 1-40 and Common Areas A and B	Pima	15 South	16 East	24	40	27-500011	09/20/07	Saguaro Water Co.	Y
116	The Estates at Old Spanish Trail	Pima	15 South	16 East	26	116	27-401189	10/07/04	Saguaro Water Co.	Y
117	Spanish Hills	Pima	15 South	16 East	27	63	27-200316	02/02/82	NA	N
117	Spanish Trail Estates	Pima	15 South	16 East	27	121	27-400871	06/09/03	Saguaro Water Co.	Y
118	Jacaranda Village at Tewa Trail	Pima	15 South	16 East	33	36	27-401179	08/30/04	Saguaro Water Co.	Y
119	Rincon Trails	Pima	15 South	16 East	34	505	27-400492	07/02/02	Saguaro Water Co.	N
119	Whisper Ranch	Pima	15 South	16 East	34	46	27-400803	12/17/02	Saguaro Water Co.	Y
119	Rancho Loma Alta	Pima	15 South	16 East	34	24	27-401121	03/24/04	Saguaro Water Co.	N
120	Mountain Creek Ranch	Pima	15 South	16 East	36	64	27-400201	07/16/01	NA	N
121	Coyote Creek	Pima	15 South	16 East	23, 25 & 26	395	27-400095	12/10/99	Saguaro Water Co.	N
122	Rocking K Ranch	Pima	15 South	16 East	8-10, 15-17, 21, 22 & 27	2737	27-200292	06/06/95	NA	N
124	Casitas de Valle #2	Pima	16 South	14 East	5	34	27-200043	08/23/90	NA	N
127	Rincon Desert Estates	Pima	16 South	16 East	22 & 27	45	27-200288	06/15/94	Saguaro Water Co.	N
128	Rancho del Lago	Pima	16 South	16 East	3, 4, 8-10, 15 & 16	234	27-200285	10/21/83	NA	N
128	Vail Valley Ranch	Pima	16 South	16 East	3, 4, 8, 10, 15 & 16	4945	27-200370	07/23/90	NA	N
129	Rancho Buena Vista	Pima	17 South	13 East	22	29	27-200276	08/09/99	Las Quintas Serenas Water Company	N
130	La Canada Norte (1989)	Pima	17 South	13 East	26	50	27-200160	07/25/89	Las Quintas Serenas Water Company	N
130	La Canada Norte (1994)	Pima	17 South	13 East	26	69	27-200161	09/16/94	Las Quintas Serenas Water Company	N
130	Mesquite Heights (1997)	Pima	17 South	13 East	26	42	27-200197	03/04/97	Las Quintas Serenas Water Company	N
130	Santa Cruz Meadows Lots 1-239	Pima	17 South	13 East	26	239	27-200311	09/16/94	Las Quintas Serenas Water Company	N
130	Valle Verde del Norte	Pima	17 South	13 East	26	5	27-200372	08/15/84	Valle Verde Water Co.	N
130	Valle del Sol	Pima	17 South	13 East	25	19	27-200373	09/29/80	NA	N
131	Colonias La Canada Lots 1-82	Pima	17 South	13 East	27	82	27-200072	10/14/93	Las Quintas Serenas Water Company	N
131	Colonias La Canada, Lots 83-219	Pima	17 South	13 East	27	137	27-300386	04/03/98	Las Quintas Serenas Water Company	N
131	Estates at La Canada Norte, Lots 1-41	Pima	17 South	13 East	27	41	27-401012	10/22/03	Las Quintas Serenas Water Company	N
132	La Joya Verde II	Pima	17 South	13 East	35	105	27-300311	09/10/97	Community Water Company of Green Valley	N
132	Santo Tomas Villas	Pima	17 South	13 East	35	355	27-400369	01/30/01	Community Water Company of Green Valley	N
132	La Joya Verde III, Lots 130-226	Pima	17 South	13 East	35	97	27-400885	07/15/03	Community Water Company of Green Valley	Y
132	La Joya Verde III, Lots 1-65	Pima	17 South	13 East	35	65	27-400886	07/15/03	Community Water Company of Green Valley	Y
132	La Joya Verde III, Lots 66-129	Pima	17 South	13 East	35	64	27-400887	07/15/03	Community Water Company of Green Valley	Y
132	A Resubdivision of Block B of La Joya Verde, Lots 1-84 & Common Areas A & B	Pima	17 South	13 East	35	84	27-401602	07/25/05	Community Water Company of Green Valley	Y

Table 8.5-12 Assured Water Supply Determinations in the Tucson AMA[1]

A. Certificates of Assured Water Supply

Map Key	Subdivision Name	County	Location			No. of Lots	ADWR File No.	Date of Determination	Water Provider at the Time of Application	GRD Member
			Township	Range	Section					
134	Curly Horn Ranches (1985)	Pima	17 South	13 East	17 & 18	9	27-200085	06/16/85	NA	N
135	Los Arroyos Del Este	Pima	17 South	13 East	25 & 26	503	27-400808	02/14/03	Community Water Company of Green Valley	Y
135	Los Arroyos Resubdivision, Lots 1-145 & 150-167 & Common Areas "A1-A3" & "B1-B2"	Pima	17 South	13 East	26	163	27-401975	05/30/06	Community Water Company of Green Valley	Y
136	Santa Rita Villas Lots 1-218, Block 1, Common Areas A, B and C	Pima	17 South	13 East	35	218	27-500004	11/17/06	Community Water Company of Green Valley	Y
136	La Joya Verde Rancho Abrego III, Lots 1-15 and Common Area "A"	Pima	17 South	13 East	35	15	27-700295	10/01/07	Community Water Company of Green Valley	Y
138	Sahuarita Acres, Lots 1-71 and Common Area "A"	Pima	17 South	14 East	8	71	27-500023	04/09/07	Farmers Water Company	Y
139	Sahuarita Highlands, Lots 1-153, Block 1 and Common Area 'A' - Cons. Nat. Area	Pima	17 South	14 East	28	153	27-401190	12/01/04	Farmers Water Company	Y
140	Duval 19 Commercial Center	Pima	17 South	14 East	35	8	27-200106	11/22/89	Community Water Company of Green Valley	N
141	Sycamore Canyon Estates	Pima	17 South	15 East	17	19	27-300174	12/20/96	NA	N
142	Entrada	Pima	17 South	15 East	18	48	27-200112	07/23/93	NA	N
143	Entrada	Pima	17 South	15 East	18, 19 & 30	48	27-200111	05/24/88	NA	N
144	New Tucson # 23	Pima	17 South	16 East	4	234	27-200203	04/27/87	NA	N
144	New Tucson #22, 23	Pima	17 South	16 East	4	20	27-200204	10/14/93	NA	N
144	New Tucson #22, 23	Pima	17 South	16 East	4	16	27-200205	04/04/94	NA	N
144	New Tucson #22, 23, 24	Pima	17 South	16 East	4	12	27-200206	06/10/94	NA	N
144	New Tucson #22, 23, 24	Pima	17 South	16 East	4	18	27-200207	12/12/94	NA	N
147	Las Campanas Block K	Pima	18 South	13 East	10	113	27-300082	05/21/96	Community Water Company of Green Valley	N
147	Las Campanas Block G	Pima	18 South	13 East	10	95	27-300098	06/28/96	Community Water Company of Green Valley	N
147	Las Campanas Block G2	Pima	18 South	13 East	10	121	27-300346	11/03/97	Community Water Company of Green Valley	N
147	Las Campanas Block H, Lots 1-84	Pima	18 South	13 East	10	84	27-400186	01/19/00	Community Water Company of Green Valley	N
147	Las Campanas Block M, Lots 1-219	Pima	18 South	13 East	10	219	27-400376	03/02/01	Community Water Company of Green Valley	N
147	Las Campanas Block F	Pima	18 South	13 East	10	95	27-400455	08/21/02	Community Water Company of Green Valley	N
147	Las Campanas Block L, Lots 1-67 & Common Area A	Pima	18 South	13 East	10	67	27-401317	09/09/04	Community Water Company of Green Valley	N
149	La Posada II	Pima	18 South	13 East	13	6	27-400365	02/07/01	Farmers Water Company	N
153	De Anza Links	Pima	18 South	13 East	34	22	27-401136	02/13/04	Farmers Water Company	N
153	De Anza Links II, Lots 1-17 and Common Areas A & B	Pima	18 South	13 East	34	17	27-401810	01/30/06	Farmers Water Company	Y
154	Springs II at Santa Rita, The	Pima	18 South	13 East	34; and 19 South 13 East 3	114	27-300344	11/04/97	Farmers Water Company	N
154	Springs II Resubdivision, The	Pima	18 South	13 East	34; and 19 South 13 East 3	51	27-400084	08/19/99	Farmers Water Company	N
155	Quail Creek Phase II	Pima	18 South	13 East	1, 2, 5-7	1504	27-400699	11/01/02	Quail Creek Water Co	N
156	Las Campanas Blocks D & E, Lots 1-268 & Common Area A	Pima	18 South	13 East	10	268	27-401825	01/03/06	Community Water Company of Green Valley	Y
156	Las Campanas, Block C, Lots 1-283 and Common Area "A"	Pima	18 South	13 East	10	283	27-700275	10/01/07	Community Water Company of Green Valley	Y
157	Las Campanas Block B, Lots 1-118	Pima	18 South	13 East	10	118	27-401398	12/17/04	Community Water Company of Green Valley	Y
160	Madera Highlands, Villages 1-10 & 15	Pima	18 South	13 East	12 & 13; and 18 South 14 East 7 & 18	757	27-402096	09/05/06	Farmers Water Company	Y
160	Madera Highlands, Villages 27 and 29, and Common Areas "D", "E", "F" and "G"	Pima	18 South	13 East	13; and 18 South 14 East 18	119	27-700354	11/15/07	Farmers Water Company	Y
161	Madera Reserve	Pima	18 South	13 East	13, 18, 19 & 24	159	27-300142	08/21/96	Farmers Water Company	N
162	Paseo Tierra Townhomes	Pima	18 South	13 East	15	18	27-400131	11/10/99	Community Water Company of Green Valley	Y
164	Solar Del Viejo, Lots 1-81, Common Areas A & B	Pima	18 South	13 East	22 & 27	81	27-401607	03/17/05	Green Valley Domestic Water Improvement District	Y
165	Madera Foothills Estates, Lots 26-67	Pima	18 South	13 East	23, 24 & 25	42	27-400456	06/12/01	Farmers Water Company	Y
166	Madera Foothills Estates	Pima	18 South	13 East	24 & 35	25	27-300116	07/08/96	Farmers Water Company	N
167	Pasadera, Lots 1-29	Pima	18 South	13 East	25 & 26	29	27-400380	02/07/01	Farmers Water Company	N

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			Township	Range	Section					
167	Colonia Real Lots 1-50	Pima	18 South	13 East	25 & 26	50	27-401210	07/01/04	Farmers Water Company	Y
168	Links at Santa Rita Springs	Pima	18 South	13 East	27	94	27-300266	06/25/97	Farmers Water Company	N
168	Presidio at Santa Rita Springs, The	Pima	18 South	13 East	27	252	27-300424	06/23/98	Farmers Water Company	N
168	Parcel E at Santa Rita Springs	Pima	18 South	13 East	27	35	27-400148	12/15/99	Farmers Water Company	N
170	Duval Commerce Park	Pima	18 South	13 East	3	15	27-300244	02/09/99	Community Water Company of Green Valley	N
171	Greens at Santa Rita Springs, The	Pima	18 South	13 East	34	47	27-300233	02/12/97	Farmers Water Company	N
171	Greens at Santa Rita Springs, Lots 226-2	Pima	18 South	13 East	34	9	27-300365	11/04/97	Farmers Water Company	N
172	Stone House	Pima	18 South	14 East	8	222	27-401424	01/25/05	Quail Creek Water Co	Y
173	Madera Highlands: Villages 11,12,13,14 & 16 - 23	Pima	18 South	14 East	18	617	27-401612	05/02/05	Farmers Water Company	Y
174	Pozo Nueva Ranch Estates	Pima	19 South	9 East	22 & 23	12	27-200238	01/28/90	NA	N
174	Pozo Nuevo Ranch Estates	Pima	19 South	9 East	22 & 23	12	27-200239	01/28/90	NA	N
175	San Ignacio Villas	Pima	19 South	13 East	4	45	27-300181	11/20/96	Green Valley Domestic Water Improvement District	N
175	San Ignacio Vistas II, Resub.	Pima	19 South	13 East	4	32	27-300192	11/20/96	Green Valley Domestic Water Improvement District	N
175	San Ignacio Heights Resb,Lots1,2&157-165	Pima	19 South	13 East	4	11	27-300275	07/10/97	Green Valley Domestic Water Improvement District	N
175	San Ignacio Vista II	Pima	19 South	13 East	4	72	27-300279	06/05/97	Green Valley Domestic Water Improvement District	N
175	San Ignacio Vistas II, Phase 2	Pima	19 South	13 East	4	130	27-300347	11/04/97	Green Valley Domestic Water Improvement District	N
176	Canoa Northwest Lots 1-84 & 1-58,A,B&C	Pima	19 South	13 East	9	58	27-400242	04/27/00	Green Valley Domestic Water Improvement District	N
178	Canoa Preserve	Pima	19 South; 18 South	13 East; 13 East	2;35 & 36	80	27-401781	09/13/07	Farmers Water Company	Y
179	Canoa Northwest Lots 1 thru 167	Pima	19 South	13 East	5, 8 & 9	167	27-400144	11/12/99	Green Valley Domestic Water Improvement District	N
179	Canoa Northwest Lots 167 thru 329	Pima	19 South	13 East	5, 8 & 9	163	27-400289	06/13/00	Green Valley Domestic Water Improvement District	N
180	Canoa Ranch Block 28	Pima	19 South	13 East	8, 9, 16, 17 & 19	193	27-400935	12/24/03	Green Valley Domestic Water Improvement District	Y
180	Canoa Ranch Blocks 8, 9, &15	Pima	19 South	13 East	8, 9 & 10	15	27-401188	08/08/05	Green Valley Domestic Water Improvement District	Y
180	Canoa Ranch, Block 22 & a portion of Block 27, Lots 1-140, Common Areas A & B	Pima	19 South	13 East	8	140	27-401564	08/15/05	Green Valley Domestic Water Improvement District	Y
181	Canoa Ranch Block 21	Pima	19 South	13 East	9	60	27-400875	04/24/03	Green Valley Domestic Water Improvement District	N
181	Canoa Ranch Blocks 19 & 20, Lots 1-99 CA A&B	Pima	19 South	13 East	9	100	27-400883	08/27/03	Green Valley Domestic Water Improvement District	Y
181	Canoa Ranch Block 11	Pima	19 South	13 East	9	17	27-400896	01/20/04	Green Valley Domestic Water Improvement District	Y

Table 8.5-12 Assured Water Supply Determinations in the Tucson AMA[1]

B. Water Adequacy Reports

Map Key	Subdivision Name	County	Location			No. of Lots	ADWR File No.	ADWR Adequacy Determination[2]	Date of Determination	Water Provider at the Time of Application
			Township	Range	Section					
3	Rancho Robles	Pinal	9 South	15 East	35	17	53-501269	Adequate	08/09/79	Arizona Water Company - Oracle System
3	Two O'Clock Hill	Pinal	9 South	15 East	35	20	53-501587	Adequate	10/15/74	Arizona Water Company - Oracle System
19	Coronado Reserve formerly known as Mountain House	Pinal	10 South	15 East	2	18	53-401648	Adequate	08/04/05	Arizona Water Company - Oracle System
28	Mountain Vista Estates	Pima	11 South	14 East	2	41	53-501037	Adequate	09/21/73	Lago del Oro Water Company
39	Countryside	Pima	12 South	12 East	24	2600	53-500529	Adequate	04/16/79	Tortollita Water Co.
40	Oshrin Park	Pima	12 South	12 East	25 & 26	30	53-501089	Adequate	06/17/74	NA
40	Oshrin Park	Pima	12 South	12 East	25 & 26	25	53-501090	Adequate	11/12/75	NA
40	Oshrin Park	Pima	12 South	12 East	25 & 26	58	53-501091	Adequate	02/26/76	NA
41	Tangerine Hills	Pima	12 South	13 East	1	117	53-501536	Adequate	01/18/80	NA
43	Monte del Oro	Pima	12 South	13 East	12	187	53-501006	Adequate	06/08/80	NA
44	Oro Valley Heights	Pima	12 South	13 East	13	45	53-501088	Adequate	10/03/78	NA
45	Placita del Oro	Pima	12 South	13 East	14	3	53-501199	Adequate	12/27/79	Doney Park Water Company
46	Chaparral Heights	Pima	12 South	13 East	16	73	53-500441	Inadequate	10/23/79	NA
47	Ironwood Mesa Estates	Pima	12 South	13 East	21	10	53-500816	Adequate	06/15/79	NA
48	La Estancia	Pima	12 South	13 East	27	20	53-500852	Inadequate	01/30/79	NA
48	La Estancia	Pima	12 South	13 East	27	20	53-500853	Adequate	06/15/79	NA
48	Ranchos de la Canada #2	Pima	12 South	13 East	27	39	53-501280	Adequate	07/05/79	NA
48	Ranchos de la Canada #3	Pima	12 South	13 East	27	31	53-501281	Adequate	06/19/79	NA
49	Tucson National Townhomes West	Pima	12 South	13 East	28	82	53-501584	Adequate	12/27/79	NA
50	Moondance	Pima	12 South	13 East	29	208	53-501013	Adequate	10/03/78	NA
51	Heritage Hills #2 Lots 222-424	Pima	12 South	13 East	32	203	53-500780	Adequate	07/25/78	NA
51	Heritage Hills #2 Lots 425-557	Pima	12 South	13 East	32	133	53-500781	Adequate	08/21/78	NA
51	Heritage Hills #2 Lots 558-740	Pima	12 South	13 East	32	183	53-500782	Adequate	09/19/78	NA
51	Metropolitan Estates #1	Pima	12 South	13 East	32	59	53-500972	Adequate	01/29/74	NA
52	Las Quintas Townhouses	Pima	12 South	13 East	35	57	53-500898	Adequate	02/19/74	NA
52	Vista de la Canada	Pima	12 South	13 East	35	56	53-501642	Adequate	12/26/73	NA
53	Rancho Feliz Lots 390-441	Pima	12 South	13 East	15 & 22	357	53-501258	Adequate	07/11/78	NA
54	Canada Verde	Pima	12 South	13 East	22 & 23	39	53-500389	Adequate	07/11/78	NA
55	Pusch Ridge Estates	Pima	12 South	14 East	18	65	53-501230	Adequate	05/06/80	NA
62	Casas Arroyo	Pima	13 South	12 East	1	20	53-500414	Adequate	01/29/80	NA
63	Picture Rocks Vista	Pima	13 South	12 East	4	6	53-501145	Adequate	05/07/79	NA
65	Chula Vista Villas	Pima	13 South	13 East	2	12	53-500454	Adequate	06/15/79	NA
65	Orange Grove Manor Townhouses2	Pima	13 South	13 East	2	65	53-501078	Adequate	09/28/78	NA
66	Angelo Estates	Pima	13 South	13 East	3	7	53-500270	Adequate	09/18/73	Metropolitan Domestic Water Improvement District
67	Casas Adobes West #2	Pima	13 South	13 East	4	82	53-500413	Adequate	06/15/79	NA
68	Casa Adobes Park	Pima	13 South	13 East	9	125	53-500399	Adequate	08/22/78	NA

Table 8.5-12 Assured Water Supply Determinations in the Tucson AMA[1]

B. Water Adequacy Reports

Map Key	Subdivision Name	County	Location			No. of Lots	ADWR File No.	ADWR Adequacy Determination[2]	Date of Determination	Water Provider at the Time of Application
			Township	Range	Section					
68	Casas Adobes Park	Pima	13 South	13 East	9	194	53-500411	Adequate	11/20/73	NA
68	Casas Adobes Park #3	Pima	13 South	13 East	9	103	53-500412	Adequate	09/26/79	NA
68	El Leah	Pima	13 South	13 East	9	117	53-500606	Adequate	07/28/78	NA
68	Vaquero Villa	Pima	13 South	13 East	9	17	53-501607	Adequate	11/23/73	NA
69	Vista de Luces	Pima	13 South	13 East	10	30	53-501643	Adequate	10/04/78	NA
70	Orange Grove Pueblo #1	Pima	13 South	13 East	11	53	53-501084	Adequate	07/03/79	NA
71	Casitas del Valle #2	Pima	13 South	13 East	22	69	53-500418	Inadequate	03/23/81	Flowing Wells Irrigation District
71	Casitas del Valle Townhouses 2	Pima	13 South	13 East	22	110	53-500419	Inadequate	08/23/79	NA
74	Barcelona Manor Condominiums	Pima	13 South	13 East	1, 2, 11 & 12	240	53-500307	Adequate	12/24/79	NA
78	Millstone Manor East	Pima	13 South	15 East	25	11	53-500977	Adequate	07/28/78	NA
81	San Domingo	Pima	13 South	15 East	30	0	53-501359	Adequate	09/07/76	NA
86	La Cienega	Pima	13 South	15 East	28 & 33	17	53-500851	Inadequate	03/27/74	Hub Water Company
87	San Domingo Lots 23-46	Pima	13 South	16 East	30	15	53-501360	Adequate	12/06/77	NA
87	San Domingo Lots 27-37	Pima	13 South	16 East	30	11	53-501361	Adequate	10/17/79	NA
89	Tucson Saguaro Estates	Pima	14 South	11 East	24	34	53-501585	Adequate	06/20/79	NA
91	Tucson Mountain Park Estates	Pima	14 South	12 East	30	22	53-501583	Adequate	09/25/79	NA
94	Pio Decimo Estates	Pima	14 South	15 East	5	6	53-501194	Adequate	07/17/78	NA
94	Samprese Estates	Pima	14 South	15 East	5	119	53-501356	Adequate	05/01/79	NA
94	Tanque Verde Estates	Pima	14 South	15 East	5	70	53-501538	Adequate	02/05/80	NA
95	Pantano Townhomes	Pima	14 South	15 East	6	118	53-501099	Adequate	11/06/78	NA
95	Pantano Townhomes #2	Pima	14 South	15 East	6	92	53-501100	Adequate	06/19/79	NA
96	Stefan Estates	Pima	14 South	15 East	15	5	53-501458	Adequate	09/11/78	Halcyon Acres Annex No. 2
97	Aldea de Pascua	Pima	14 South	15 East	25	11	53-500256	Adequate	01/30/78	NA
109	Sunhaven of Tucson	Pima	15 South	14 East	10	201	53-501497	Adequate	07/17/73	Ray Water Company
113	Thunderhead Ranch	Pima	15 South	16 East	9	110	53-501544	Adequate	08/16/79	NA
114	Caserio Viejo	Pima	15 South	16 East	15	11	53-500417	Adequate	07/31/75	Chaparral City Water Co
123	Mira Bell	Pima	16 South	10 East	24	60	53-500982	Adequate	07/03/79	NA
130	Mountain View Acres	Pima	17 South	13 East	26	12	53-501028	Adequate	01/30/76	Las Quintas Serenas Water Company
137	Green Valley Country Club North	Pima	17 South	13 East	35 & 36	145	53-500734	Adequate	01/06/77	NA
145	Fairfield Green Valley Townhouses	Pima	18 South	13 East	2	258	53-500628	Adequate	08/29/73	NA
145	Green Valley Commercial Block	Pima	18 South	13 East	2	8	53-500731	Adequate	08/21/73	NA
145	Green Valley Commercial Block 2	Pima	18 South	13 East	2	5	53-500732	Adequate	11/20/75	NA
145	Green Valley Mobile Estates (1976)	Pima	18 South	13 East	2	125	53-500749	Adequate	09/14/76	NA
146	Colonia de Los Alamos (1974)	Pima	18 South	13 East	3	1066	53-500485	Adequate	05/17/74	NA
148	Green Valley Community Complex	Pima	18 South	13 East	11	11	53-500733	Adequate	07/15/75	NA
148	Green Valley County Club Vista	Pima	18 South	13 East	11	30	53-500735	Adequate	06/19/78	Community Water Company of Green Valley

Table 8.5-12 Assured Water Supply Determinations in the Tucson AMA[1]

B. Water Adequacy Reports

Map Key	Subdivision Name	County	Location			No. of Lots	ADWR File No.	ADWR Adequacy Determination[2]	Date of Determination	Water Provider at the Time of Application
			Township	Range	Section					
148	Green Valley Desert Meadows	Pima	18 South	13 East	11	223	53-500740	Adequate	01/06/77	NA
148	Green Valley South Acres	Pima	18 South	13 East	11	73	53-500752	Adequate	12/12/77	NA
148	Green Valley Townhouses #6	Pima	18 South	13 East	11	84	53-500754	Adequate	02/21/74	NA
149	Green Valley Mobile Estates (1975)	Pima	18 South	13 East	13	16	53-500748	Adequate	04/30/75	NA
150	Green Valley Esperanza Estates Lots 1-100	Pima	18 South	13 East	15	100	53-500741	Adequate	08/11/76	Community Water Company of Green Valley
150	Green Valley Esperanza Estates Lots 206-258	Pima	18 South	13 East	15	53	53-500742	Adequate	10/12/78	Community Water Company of Green Valley
150	Green Valley Esperanza Estates Lots 259-368	Pima	18 South	13 East	15	110	53-500743	Adequate	01/03/79	Community Water Company of Green Valley
150	Green Valley Foothills Townhouses	Pima	18 South	13 East	15	35	53-500747	Adequate	08/14/79	NA
151	Green Valley Desert Hills #1	Pima	18 South	13 East	27	49	53-500736	Adequate	01/23/80	NA
151	Green Valley South Clusters	Pima	18 South	13 East	27	44	53-500753	Adequate	01/26/78	NA
152	Green Valley Desert Hills #3	Pima	18 South	13 East	28	753	53-500738	Adequate	02/01/79	NA
152	Green Valley Desert Hills #6	Pima	18 South	13 East	28	107	53-500739	Adequate	01/04/80	NA
152	Green Valley Retirement Apts	Pima	18 South	13 East	28	110	53-500751	Adequate	10/12/78	Community Water Company of Green Valley
157	Green Valley Townhouses #7 Lots 1-185	Pima	18 South	13 East	11, 27 & 28	185	53-500755	Adequate	07/23/74	Community Water Company of Green Valley
158	Green Valley Townhouses #7 Lots 186-385	Pima	18 South	13 East	11, 27 & 28	199	53-500756	Adequate	01/16/78	Community Water Company of Green Valley
163	Clara Vista del Valle	Pima	18 South	13 East	15 & 22	21	53-500462	Adequate	01/16/78	Community Water Company of Green Valley
169	Green Valley Desert Hills #2	Pima	18 South	13 East	27 & 28	613	53-500737	Adequate	08/24/78	NA
169	Green Valley South Acres	Pima	18 South	13 East	27 & 28	73	53-500752	Adequate	12/12/77	NA

Table 8.5-12 Assured Water Supply Determinations in the Tucson AMA[1]

C. Analyses of Assured Water Supply

Map Key	Subdivision Name	County	Location			No. of Lots	ADWR File No.	Date of Determination	Water Provider at the Time of Application
			Township	Range	Section				
1	Willow Springs Ranch South Village	Pinal	8 South	13 East	8, 9, 14, 15, 22, 23, 25, 26 & 27; and 8 South 14 East 20, 29 & 30	6,560	28-401289	10/14/04	Willow Springs Utilities
6	Red Rock Village	Pinal	10 South	10 East	4, 5, 8, 9 & 10	3,808	28-400918	11/02/04	Red Rock Utilities
18	Saddlebrooke Ranch	Pinal	10 South	14 East	4, 5, 7 & 8	6,000	28-400263	03/21/02	Arizona Water Company - Oracle System
21	B_2 Ranch	Pinal	10 South	14 East	1; and 10 South 15 East 5	1,553	28-401962	09/12/06	Undetermined
104	Tucson Mountain Ranch & Valencia Ranch	Pima	15 South	12 East	9	887	28-500065	07/24/07	Diablo Village Water Co
107	Pomegranate Farms	Pima	15 South	12 East	18	3,908	28-700315	03/28/08	Diablo Village Water Co
111	Voyager Expansion	Pima	15 South	15 East	32	1,200	28-400732	10/11/02	Voyager Water Company
125	Swan Southlands Development	Pima	16 South	14 East	10, 12, 13, 14 & 15	8,525	28-401840	06/12/06	NA
126	Sahuarita Farms (N. half) and Continental Farms (S. half)	Pima	16 South; 17 South; 17 South; 18 South	14 East; 13 East; 14 East; 13 East	31;12, 13, 24 & 25;5-8, 17-19 & 30;24	31,029	28-500050	07/30/07	Farmers Water Company
133	Rancho Sahuarita	Pima	17 South	13 East	1, 11-14, 23	10,800	28-300120	07/23/96	NA
135	Sahuarita West & East Property	Pima	17 South	13 East	25, 26 & 35	788	28-400352	02/07/01	Community Water Company of Green Valley
159	Madera Highlands (2000)	Pima	18 South	13 East	7, 12, 13 & 18	1,800	28-400259	07/13/00	Farmers Water Company
159	Madera Highlands (2002)	Pima	18 South	13 East	12 & 13; and 18 South 14 East 7 & 18	1,800	28-400616	04/15/02	Farmers Water Company
171	Santa Rita Springs	Pima	18 South	13 East	26, 27 & 34	1,081	28-300194	10/03/96	Farmers Water Company
177	Canoa Ranch	Pima	19 South	13 East	8, 9 10, 17 & 18	2,200	28-400615	01/16/02	Green Valley Domestic Water Improvement District
182	Ridgeline Estates	Pima	19 South	14 East	18, 19, 20, 29 & 30	166	28-700397	02/15/08	NA

D. Designated Water Providers

Map Key	Water Provider Name	County	Designation No.	Date Application Received	Date Designation Issued	Projected or Annual Estimated Demand (af/yr)	Year of Projected or Annual Estimated Demand
A	City of Tucson	Pima	26-400957.0000	04/29/03	06/12/07	183,956	2015
B	Marana Municipal Water System	Pima	26-402254.0000	07/31/06	05/07/07	7,580	2017
C	Metropolitan Domestic Water Imp. Dist. - West	Pima	26-401922.0000	10/20/05	09/25/06	1,014	2016
D	Metropolitan Domestic Water Improvement District	Pima	26-401062.0000	09/02/03	07/31/06	13,302	2016
E	Sahuarita Water Company	Pima	26-401203.0000	01/06/04	12/01/04	2,578	2014
F	Spanish Trail WC	Pima	26-000170.0000	07/18/97	04/16/96	1,843	2005
G	Town of Oro Valley	Pima	26-400765.0000	07/01/02	06/26/03	15,049	2013
H	Vail Water Company	Pima	26-401752.0000	05/03/05	11/10/05	3,749	2015
I	Willow Springs Utilities Company	Pinal	26-402225.0000	07/06/06	04/15/08	2,635	2017

[1] Includes water reports issued under the Water Adequacy program prior to 1980 implementation of the Assured Water Supply program.

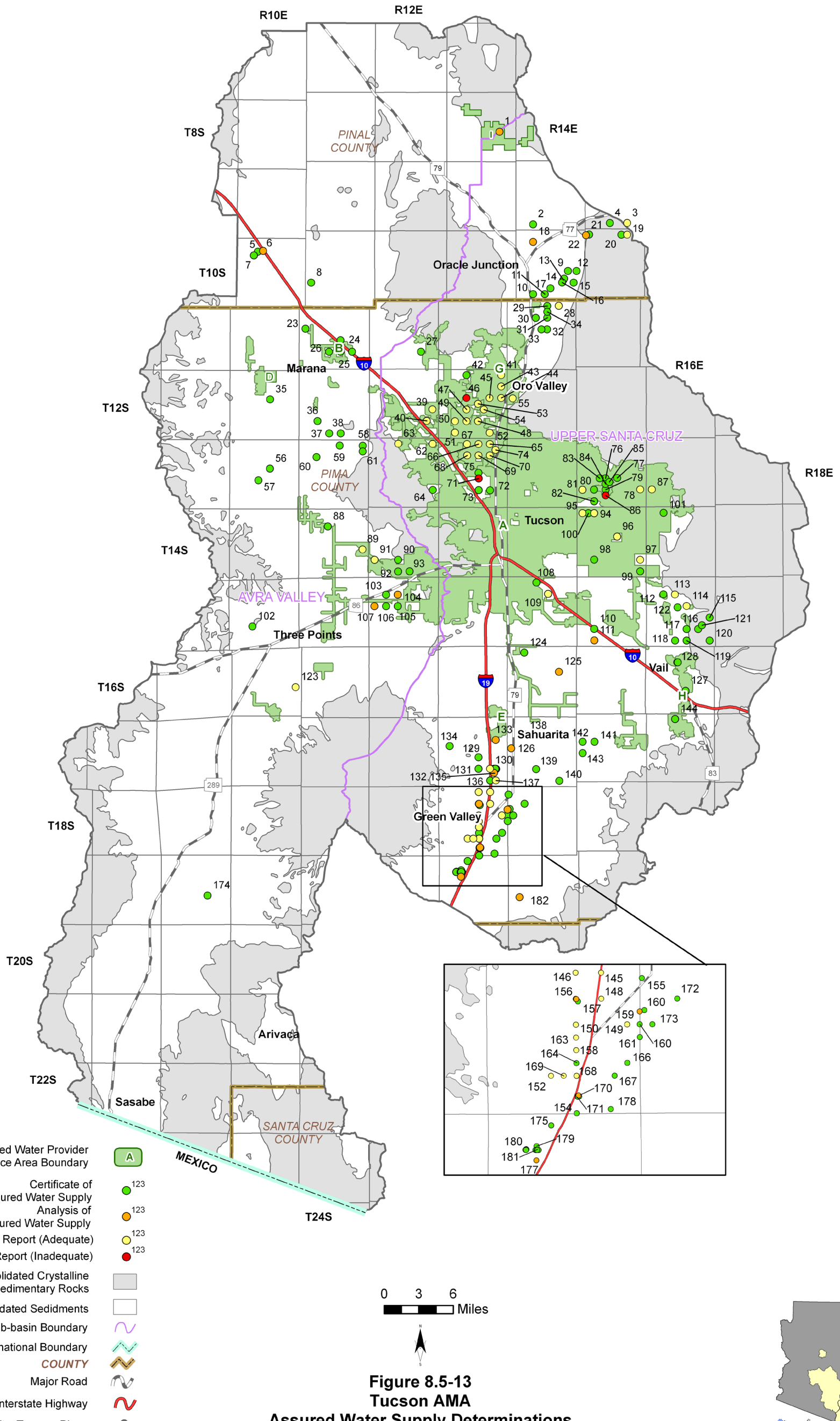

Figure 8.5-13
Tucson AMA
Assured Water Supply Determinations

Tucson AMA
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